



Cisco Intersight Workload Optimizer

Revolutionize application resource management for multicloud

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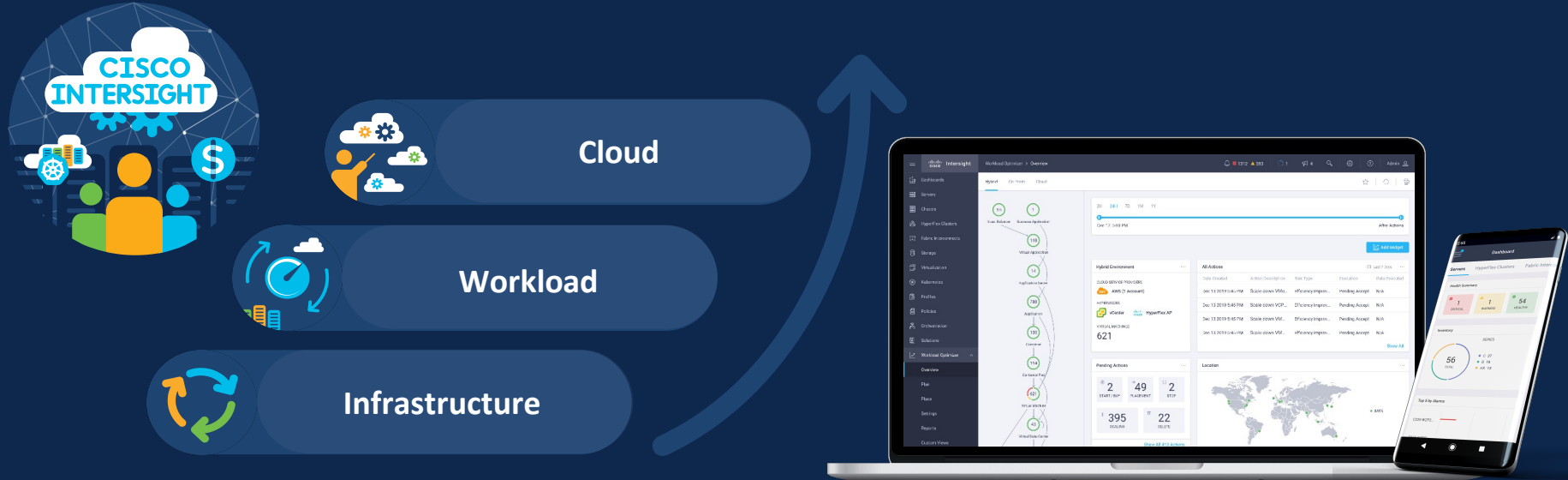
Cisco Intersight

Cloud operations platform



Intelligent visualization, optimization, and orchestration for applications and infrastructure across public cloud and on-premises environments.

Mission: Delivering a cloud operating model for Hybrid Cloud



Automation

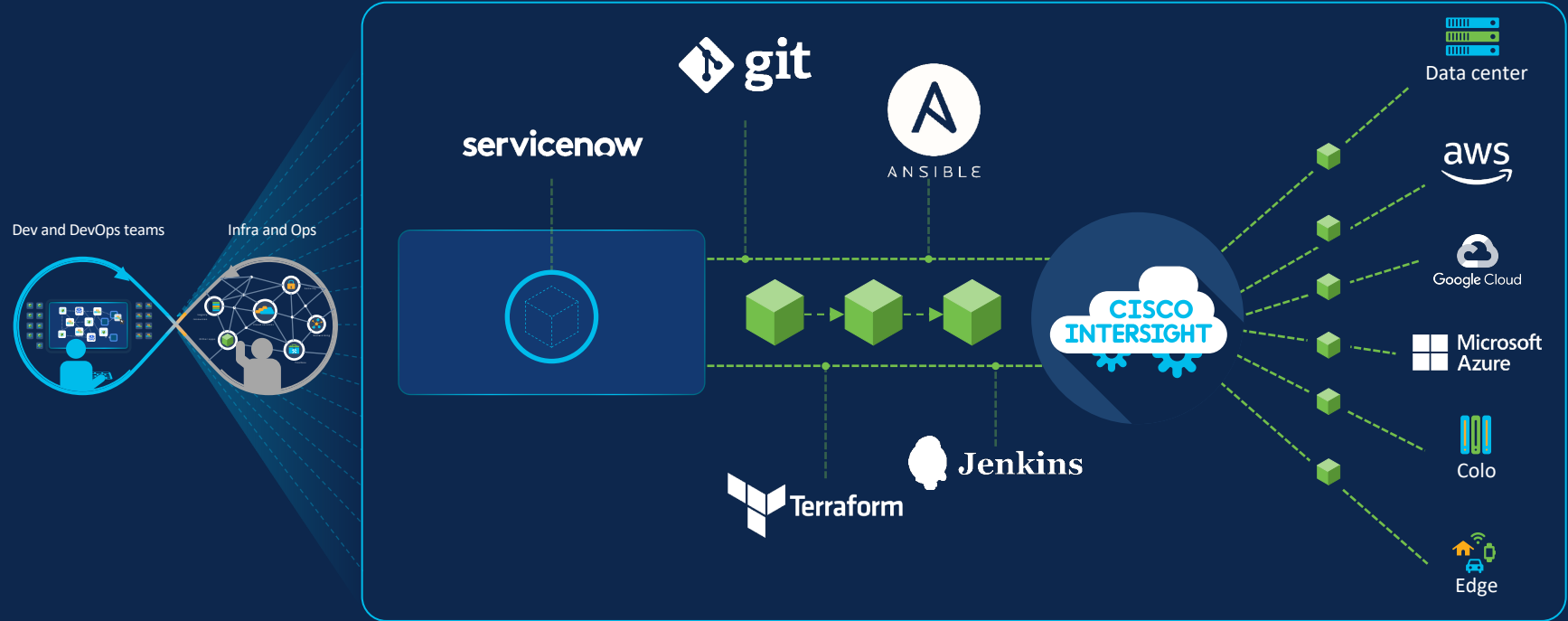
Observability

Cloud Native

Connecting people and technology in a hybrid world



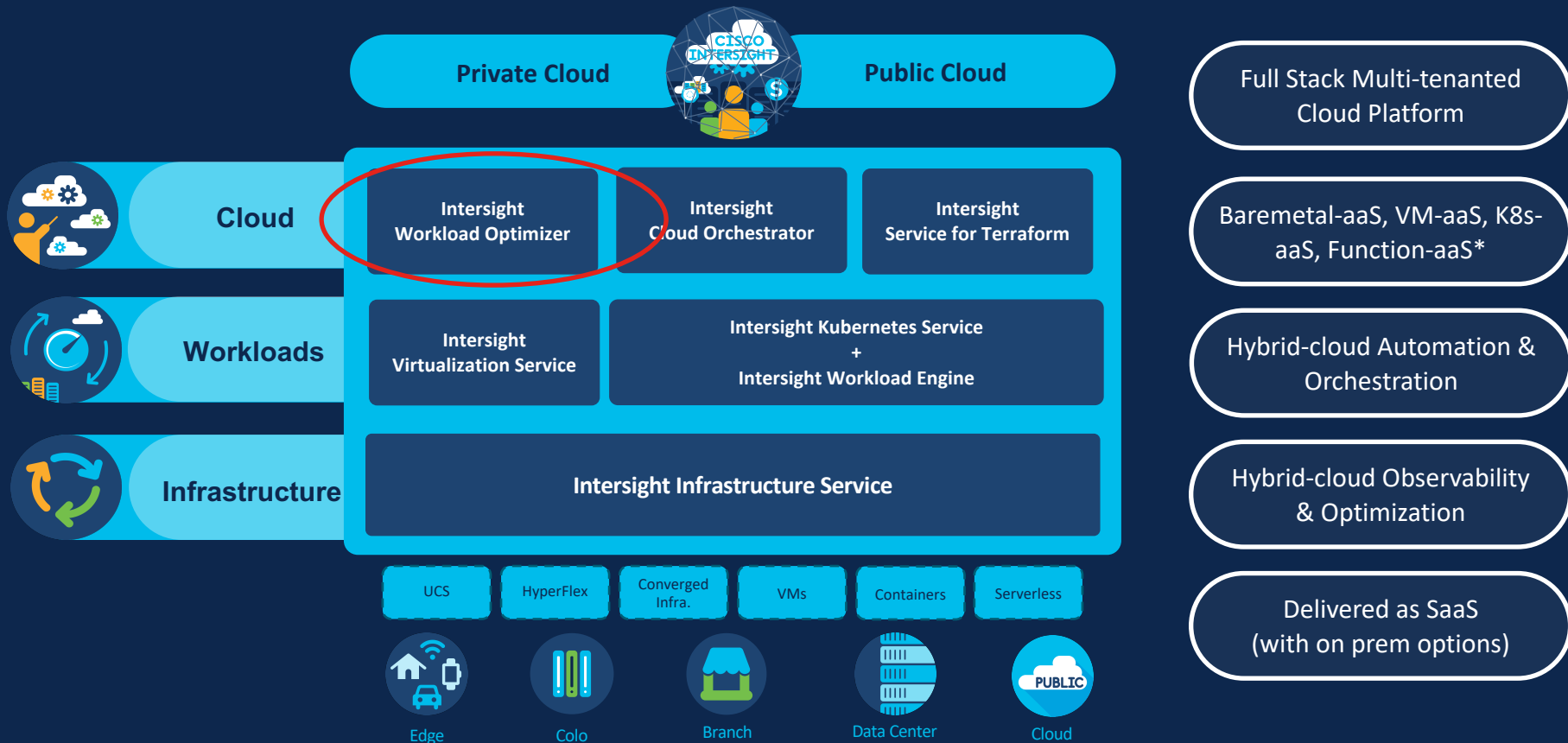
Integrate with DevOps to accelerate application delivery



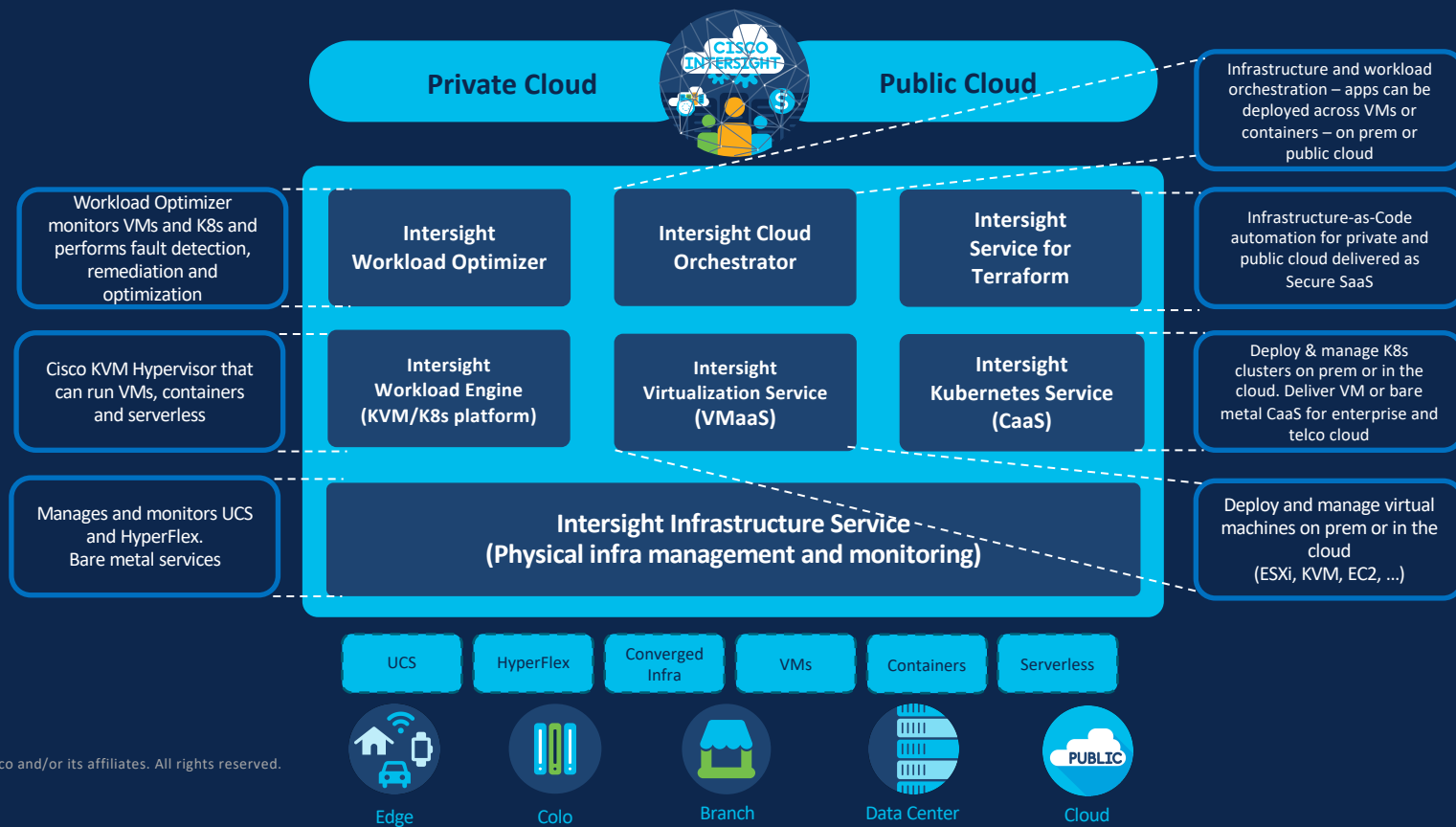
Accelerate CI/CD processes and extend infrastructure as code (IaC) workflows by integrating Intersight into your DevOps toolchains

Simplify lifecycle management with integrated infrastructure and workload orchestration tools

Intersight Hybrid Cloud Platform

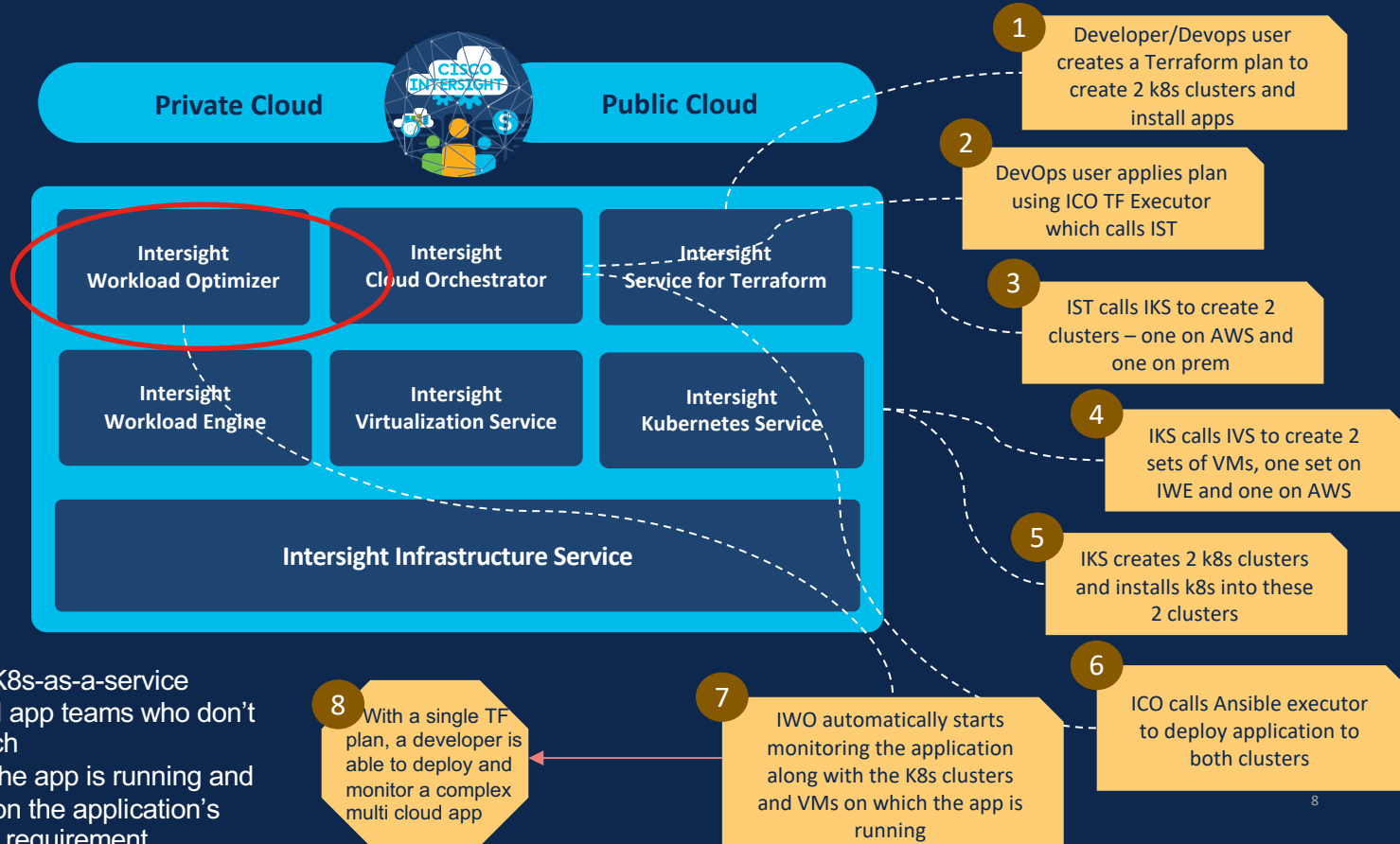


Intersight Hybrid Cloud Platform



Putting it all together - Example Application Deployment

Developer/DevOps user wants to deploy a hybrid k8s application. She wants the web tier in AWS for elastic scaling, but the DB needs to be on prem for data sovereignty and cost reasons



Enterprise IT offers this K8s-as-a-service capability to their internal app teams who don't need to worry about which server/hypervisor/cloud the app is running and can pick location based on the application's cost/security/sovereignty requirement

Apps are exploding and are more important than ever...



55%

Increase in
the number of
applications over
next two years*



>20

Applications created
in the next two years
will have an average
of over 20
dependencies*



92%

Report that having
visibility and insight
into the performance
of
the technology
stack is critical**



77%

See increased demands on
their infrastructure and
pressure to maximize space
and resources***

...but managing application resources is beyond human scale!

How can your teams balance app performance and cost when teams are:

- Siloed with different tools for different layers of the app stack
- Flying blind with no unified view of the complex infra and app dependencies across on-prem and public clouds
- Struggling to separate signal from noise and prioritize the constant flow of alerts coming from separate tools
- Challenged to make real-time decisions based on capacity on-prem or in public clouds



Today's independent solutions cannot assure performance...



Siloed teams

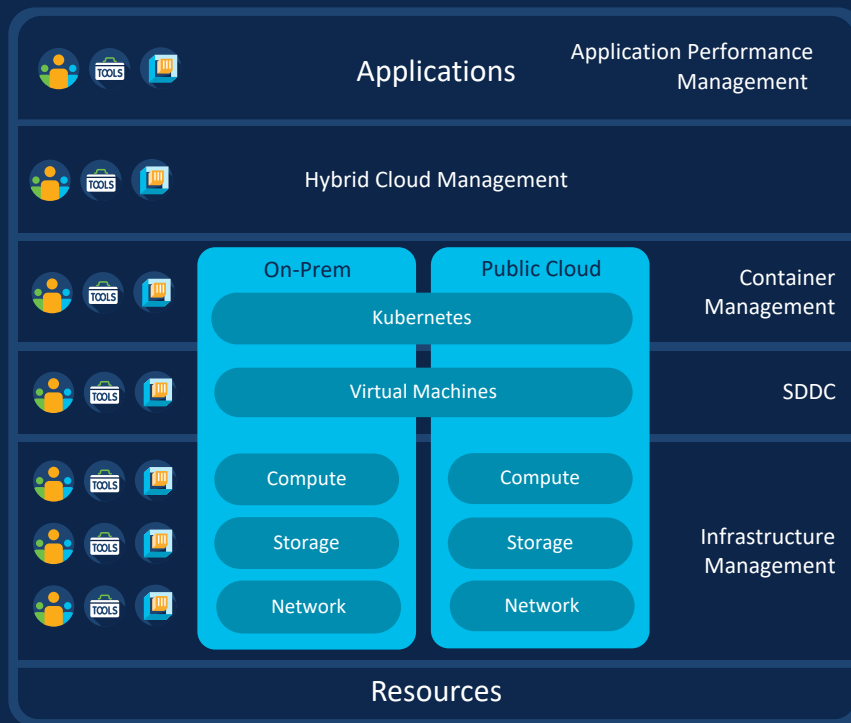


Disparate data



Fragmented tools

Disconnected and reactive
operating model



...and doing nothing comes at a cost



War rooms resulting from lack of visibility across apps and infrastructure



Unnecessary time and cost wasted with multiple platform-specific tools



Increasing costs from overprovisioning on premises and in the cloud



App performance issues impacting user experience and business



Keeping track of and adhering to compliance rules



Under utilized infrastructure resources

How can you assure application performance and reduce cost in this complex world?

Real-time Analytics

powered by AI to drive the right resource decisions

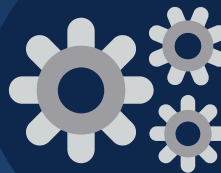


Let intelligent software manage your application resources



Complete Visibility

into app/infrastructure interdependencies

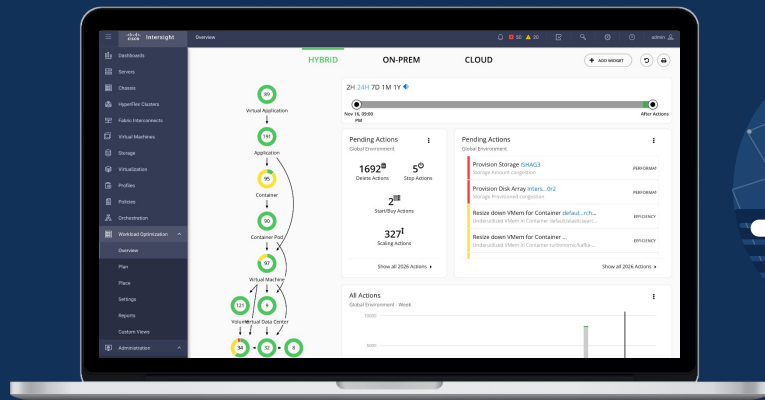


Full-stack Automation

allocates and optimizes resources in real-time

Cisco Intersight Workload Optimizer

Revolutionize application resource management for multicloud



Complete visualization across all apps and infra
Mapping of complex interdependencies

Real-time, AI-powered analytics
Continuously balancing performance and cost

Actionable recommendations
Automated, real-time actions

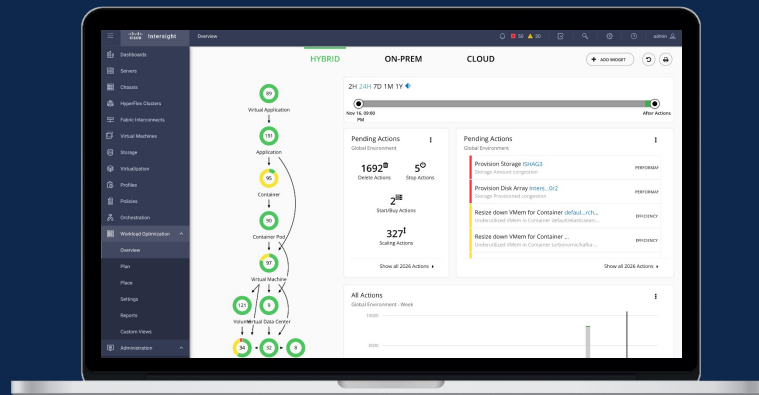
Simplify application
resource management

Reduce OPEX and
preserve capital

Adapt to change and
reduce risk

Cisco Intersight Workload Optimizer

Ensure application performance and reduce cost



Simplify application resource management

Collect, analyze and stitch together infrastructure resource telemetry data across all environments with a single tool

Reduce OPEX and preserve capital

Continuously optimize IT app resources for efficient use of existing infrastructure and lower operational costs

Adapt to change and reduce risk

Take the guesswork out of planning for the future with what-if scenario modeling with accurate capacity forecasting to avoid overprovisioning

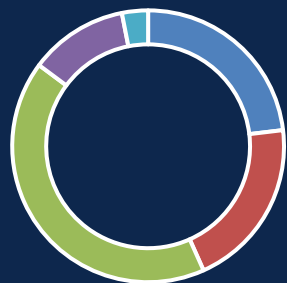
Proven results:

Forrester Report: Total Economic Impact of Intersight Workload Optimizer

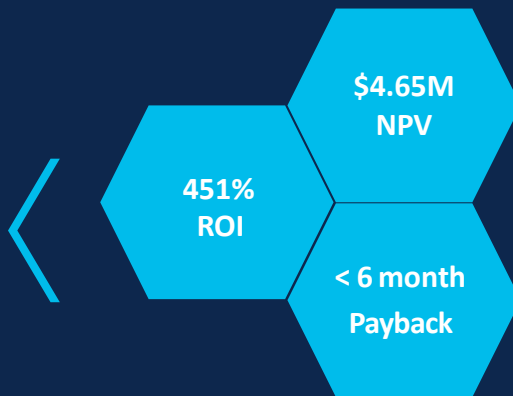
Through six customer interviews and data aggregation, Forrester concluded that Intersight Workload Optimizer had the following three-year financial impact.

Summary Of Benefits

Three-year Benefits (\$6.9M)



| | |
|---|----------|
| Revenue increase from increased application performance | \$2.9M |
| Operational Efficiency Savings | \$1.4M |
| Infrastructure (public cloud and on-premises) TCO savings | \$1.6M |
| Avoid SW license fees | \$214.6K |
| Revenue for faster time to market | \$811.7K |



Business Outcomes

- Improvements to revenue generating application performance
- Increased staff productivity from automation and collaboration across infrastructure and application teams
- Eliminate infrastructure and cloud waste

[Forrester Analyst Report - Total Economic Impact of Cisco Intersight Workload Optimizer](#)

Intersight Workload Optimizer automates decision-making

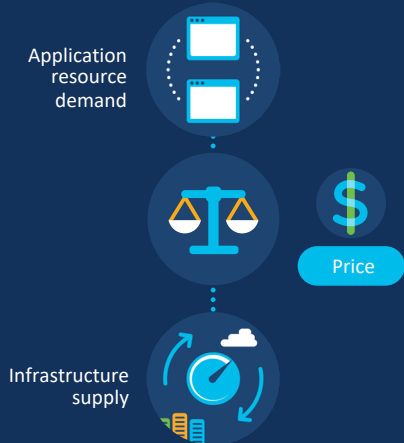
1 Abstraction

App workloads and infrastructure dependencies are captured across the stack



2 Analytics

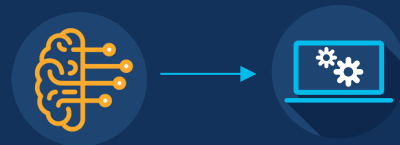
Environment is modeled as a market of buyers and sellers. IWO applies principles of supply, demand, and price to match app demand to infrastructure supply.



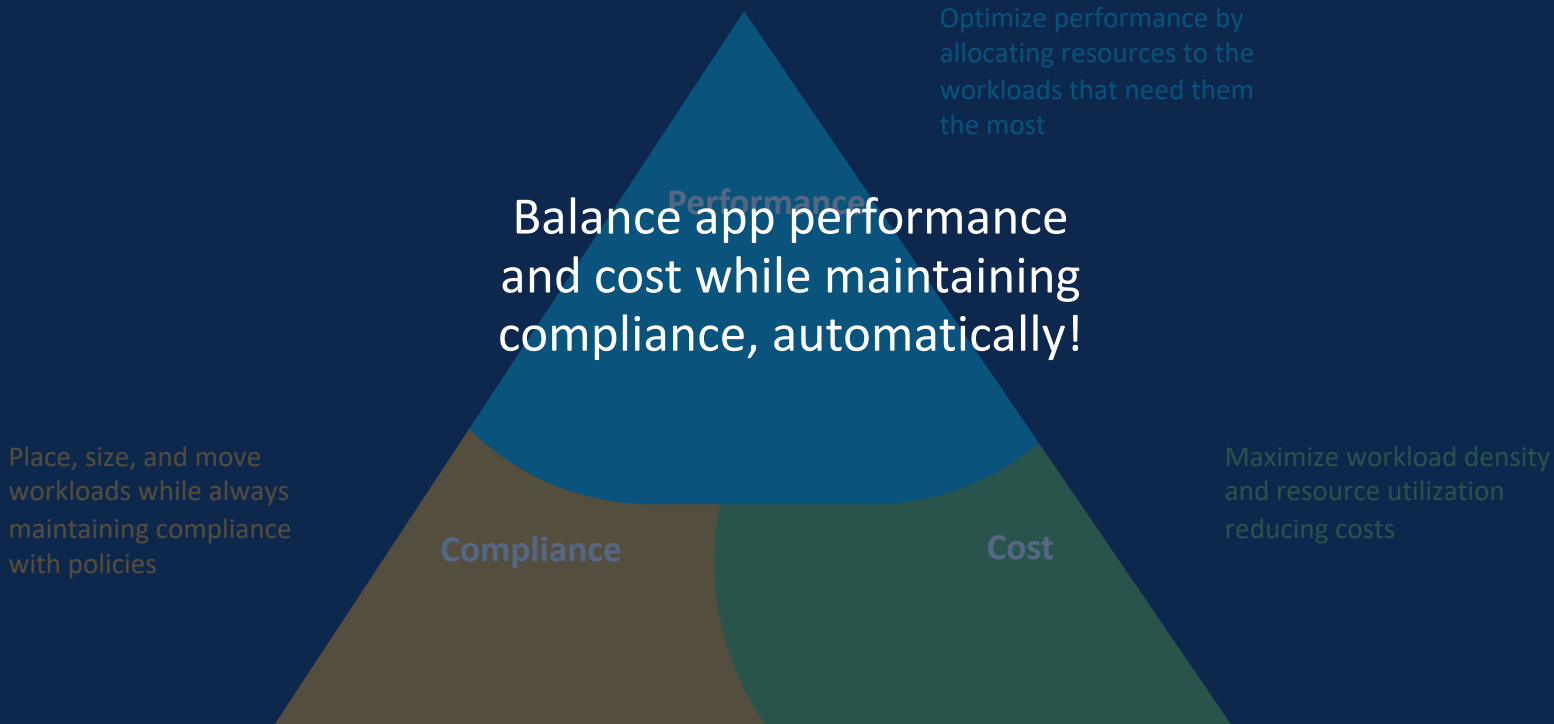
3 Automation

Resource optimization applies real-time to ensure app performance and minimum cost. Actions can be manual or automated.

- Sizing and placement actions
- Provisioning actions
- Retiring resources



A balancing act

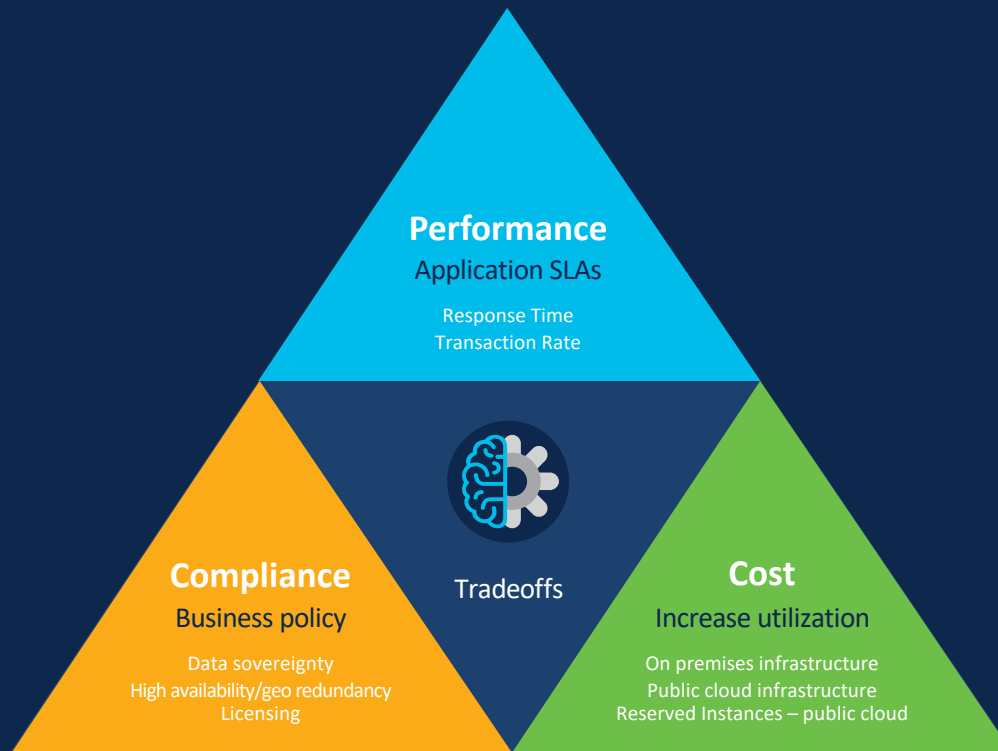


Under the hood

Intersight Workload Optimizer navigates multiple, complex tradeoffs across hybrid cloud environments to ensure performance

Actions are executed automatically to assure app performance

Scale
Place
Move
Configure
Start/Stop
Optimize Cloud
Workloads (RIs)



Under the hood

Intersight Workload Optimizer navigates multiple, complex tradeoffs across hybrid cloud environments to ensure performance

Actions are executed automatically to assure app performance

Scale

Place

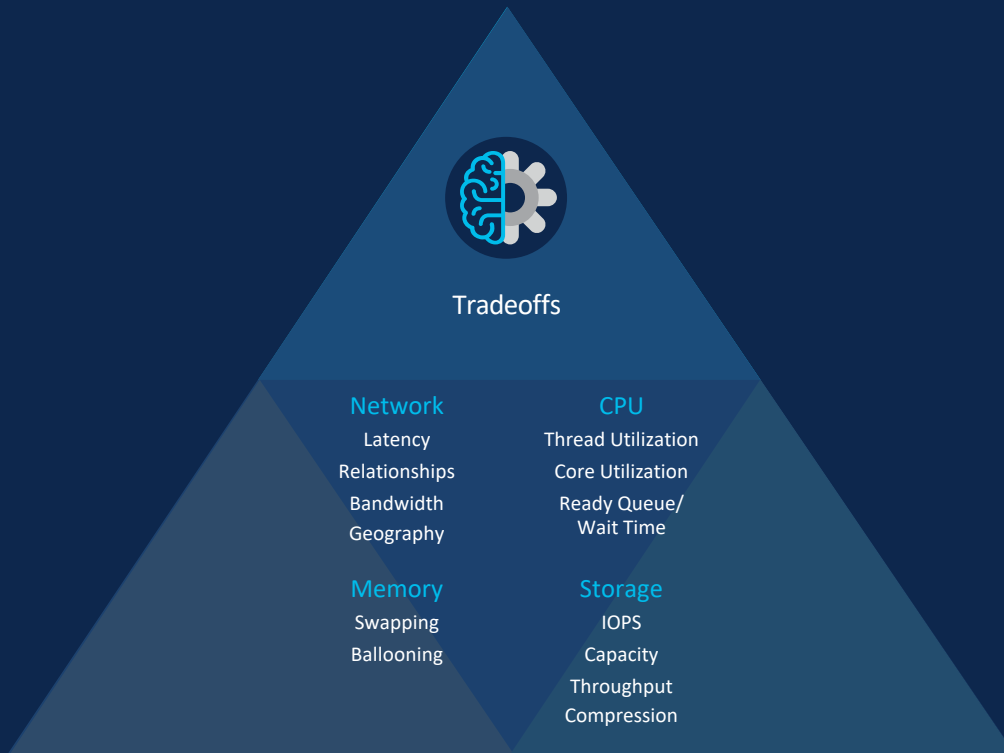
Move

Configure

Start/Stop

Optimize Cloud

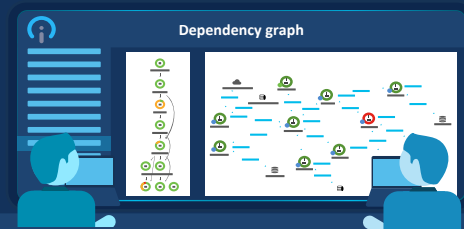
Workloads (RIs)



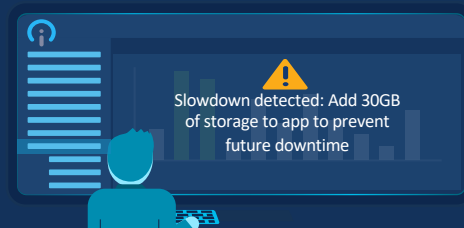
Transform data into insights for end-to-end optimization



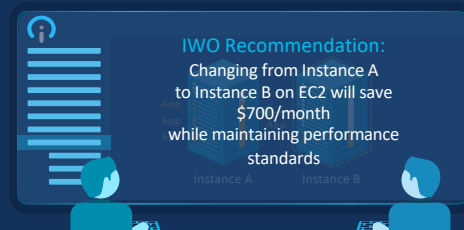
Improve situational awareness with dynamic visualization of workload and infra interdependencies



Get in front of problems before they happen



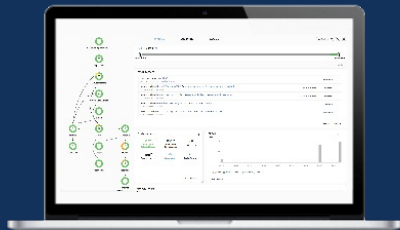
Optimize for performance and cost



A powerful combination

Intersight Workload Optimizer and AppDynamics

Application Resource Management Intersight Workload Optimizer



Visualize application resource dependencies (Infrastructure)

Automate application resourcing decisions (Infrastructure)

Continuously optimize application resources on-demand



Application Performance Management AppDynamics



Visualize application component dependencies

Automates anomaly detection down to line of code

Continuously optimize applications

Deliver continuous business and application performance

IWO - Broad and growing ecosystem of supported targets

Apps, DBs and App Performance Management



Apache Tomcat



Public Cloud and Cloud Native



Compute and Container Platforms



UCS and HyperFlex



kubernetes

HPE OneView



Microsoft Hyper-v



VMware Horizon

Storage Arrays and Hyperconverged (HCI)



HyperFlex Data Platform

NUTANIX



DELL EMC



HPE 3PAR



Compellent

HITACHI

[Intersight Workload Optimizer Target Configuration Guide](#)

Microservices architectures and DevOps operating models increase application resource management complexity

More changes



More components



More locations



More stakeholders



Assuring modern application performance can be even harder

Operating Kubernetes at scale is extremely challenging

As Kubernetes deployments grow and complexity increases, it gets more and more difficult to answer key questions to ensure smooth operations.



How should you size containers?



When do you need to reschedule (move) pods?
To which nodes?



When do you need to scale out (or back) the cluster?
By how much?



Do you have enough capacity to onboard
new services?



kubernetes

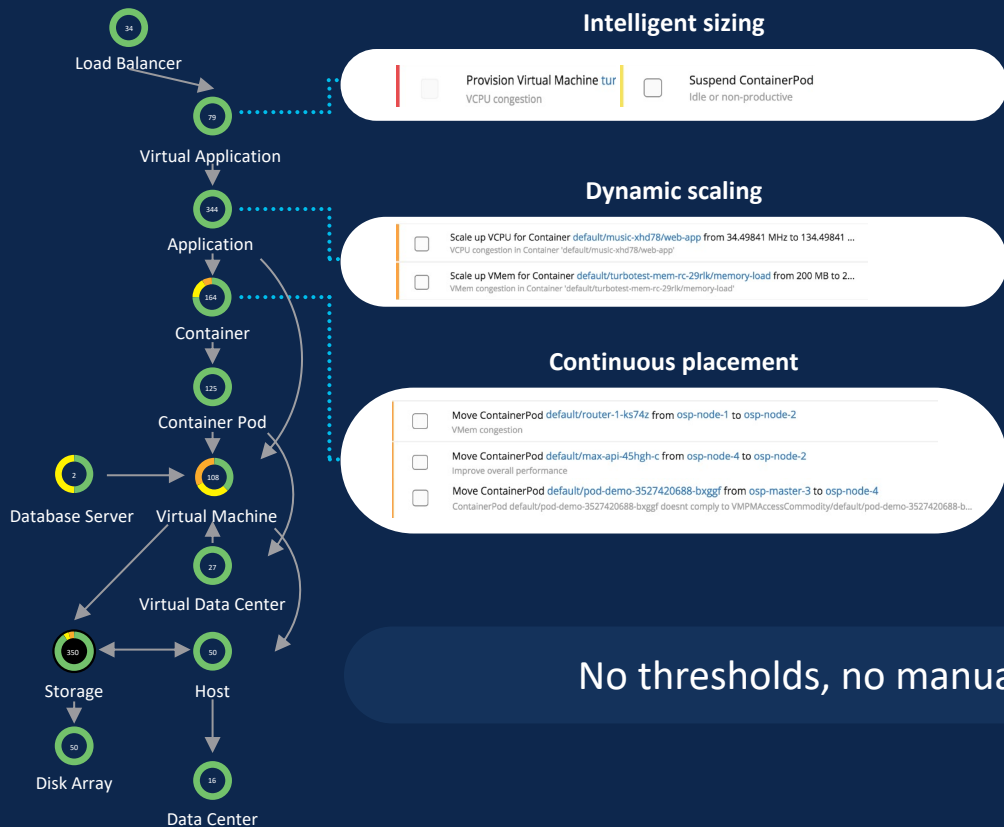
A circular progress indicator with a blue arc representing 41% of the circle.

41%

Identified complexity as a top challenge
in using and deploying containers.

Source: [Cloud Native Computing Foundation Survey 2020](#)

Managing Kubernetes performance at scale



Optimize the management of Kubernetes cluster resources

Continuous integration

Continuous deployment



- Install
- Deploy
- Harden

Monitoring
& alerts



Workload
Optimizer

How should you
size containers
from Day 1?

Dynamic
placement
& scaling to assure
application
performance
on Day 2

No thresholds, no manual setup, no guessing, just actions

IWO Kubernetes features and benefits

Capabilities

Workload Optimizer Benefits

Container rightsizing



Scale containers up or down based on application demand. Actions can be executed automatically in real-time, freeing developers to focus on application features and functionality, not resources.

Pod redistribution



Reschedule pods while maintaining service availability to avoid resource fragmentation and/or contention on the node. Safely increase density and assure cluster efficiency

Cluster scaling based on app demand



Ensure you always have exactly the right amount of infrastructure to ensure your services continuously perform.

"What if" scenario planning



Determine how much headroom you have in your clusters, or simulate adding (or removing) demand (Kubernetes pods) so you're always ready to onboard new services

Full stack, multi-cluster, hybrid cloud visibility

As public cloud adoption accelerates...complexity and cost increase

More clouds



87% of organizations have a hybrid cloud strategy. 93% have a multicloud strategy.*

More workloads



By 2022, 50% of mission critical apps will be hosted in public cloud. **

More cloud waste



Executives estimate that at least 30 percent of their cloud spending is wasted*

More uncertainty



7 in 10 organizations have experienced higher-than expected cloud costs, demonstrating the need for effective cloud planning***

Hybrid cloud resource management challenges

Beyond human scale



Lack of visibility into resources and associated costs in the cloud



What resources do I have available in which clouds and what are they costing me?



Inability to correlate app demand to the millions of cloud configuration options



How do I pick the right configuration/tier to run my workload without overprovisioning?



Pressure to reduce cloud costs/OPEX without impacting performance



How do I assure application performance for workloads running in public cloud while minimizing cost?



Dynamic and uncertain times make it difficult to plan for the future



How much cloud capacity will I need in the future and how can I be ready for what comes next?

Master application resource management for hybrid cloud with Intersight Workload Optimizer



Lack of visibility into resources and associated costs in the cloud



Single tool with full-stack visibility and proactive IT resource optimization across on-premises and public clouds environments



Inability to correlate app demand to the millions of cloud configuration options



Continuous monitoring of cloud provider catalogs for new additions/configurations. Maps workloads to best-fit resources



Pressure to reduce cloud costs/OPEX without impacting performance



AI-powered analytics deliver intelligent insights and recommendations to ensure application performance while reducing cloud costs



Dynamic and uncertain times make it difficult to plan for the future



Adapt quickly and reduce risk with data-driven capacity planning and “what if” scenario modeling

Assure performance and minimize cost in Amazon Web Services and Microsoft Azure environments



Continuously optimize cloud compute, storage, and database resources based on application demand



Eliminate idle and forgotten assets with real-time insight into your cloud environment



Make scaling and placement recommendations based on the resource needs of the workload to ensure performance while minimizing costs



Matches your Reserved Instances (RIs) to the right instance type/SKU and guides you to purchase the right RIs



Integrates and manages performance of all upstream versions of Kubernetes including OpenShift, Amazon EKS, Azure AKS, and Google GKE

Revolutionize application resource management with Cisco Intersight Workload Optimizer



Infrastructure and Operations Teams

- Reduce complexity
- Less time spent in war rooms and firefighting
- More time to support delivery of new services



CIO

- Visibility and efficient operations across on-prem and public cloud
- Ability to adapt quickly and reduce risk
- Reduce Opex and preserve capital



DevOps and Application Owners

- Ensure app performance
- More time spent coding and innovating
- Increased velocity and satisfied end users



Global leader in insurance, annuities
and employee benefits

Challenge

- Highly manual monitor, evaluate and response process for workloads
- Business application performance and delivery not linked to infrastructure
- Under utilized infrastructure and unpredictable cloud spend

Solution

Optimize IT resource management and ensure application performance with Cisco Workload Optimizer and AppDynamics

Results

- Identified over 10K performance & compliance risks, now mitigated with automated actions
- Immediate reduction in Azure spend by \$1.6M by optimizing templates and eliminating wasted resources
- Placement actions increase efficiencies and save \$4.8M in SQL license costs



Global firm that operates in the world's financial, energy and commodities markets.

Challenge

- Assure performance of applications as they migrate workloads from on-premises to cloud.
- Operationalized for traditional data center principles rather than cloud IaaS and lack the processes to effectively manage cloud costs

Solution

Establish cost management best practices and processes supported by Workload Optimizer

Results so far

- \$2M in amortized AWS savings (in 4 months)
- 363 AWS workloads resized for efficiency
- Over 50 unused workloads deleted



Consumer finance leader transforms business model

Challenge

- Transform longstanding business model
- Expand and modernize customer engagement channels
- Implement hands-free, cloud-enabled IT infrastructure

Solution

- Infrastructure (HCI)
- Cisco Intersight™ SaaS Systems Management Platform
- Intersight Workload Optimizer
- Cisco Application Centric Infrastructure (Cisco ACI®)
- Cisco AppDynamics

Results

- Reduced IT OpEx by more than \$3.5 million over three years
- Established hybrid cloud infrastructure with single-pane-of-glass management
- Shifted staff resources from IT administration to business enablement



Healthcare provider

Transforming their IT operations from a cost center to a business partner with workload optimization technology

\$2M

reduction in Microsoft software licensing costs

\$1.5M

in hardware cost savings as a result of increased VM density

“This [CWOM cost analysis] gave us real confidence. It’s a little scary to use the cloud because you’re not sure what will happen, and what the cost will be. CWOM did the analysis, and based on our application history, it told us where to reduce CPU and memory for potential savings in the cloud too.”

-Senior Manager of Servers and Virtualization



Cloud-based Healthcare Technology
company

Improving infrastructure efficiency
on-premises and in the cloud with
Cisco Workload Optimization Manager

\$200K

Reductions in Microsoft
Windows licensing
costs

\$500K

Savings in Microsoft SQL Server
licensing costs

“CWOM has provided tangible benefits in terms of infrastructure efficiency. But there have been other benefits that we didn’t expect: reducing and adjusting our workforce, better planning, and better application performance.”

- Senior Technology Manager and Lead Engineer

Service Offers for Intersight Workload Optimizer



Proof of Value

8 to 10 hour remote
engagement



Quick Start

Design & deployment
service



Use Cases

Library of use cases



Custom

Custom engagements

Next steps



- Schedule a call with a specialist
- Try a [demo](#)
- Start a trail

To learn more about how Cisco InterSight Workload Optimizer can help you simplify application resource management visit:

cisco.com/go/optimizer

