Welcome to the Data Center & Cloud Webinar Series

Mazen Abou Najm
Data Center & Cloud Lead - MEA

Upcoming DC & Cloud Webinars

Tuesday, 12 May 2020 **11:00 AM (GMT+4)**	Delivering Public Cloud experience in your own Private Cloud
Monday, 18 May 2020 **11:00 AM (GMT+4)**	AI and ML Transforming Day2 Operations
Tuesday, 2 June 2020 **11:00 AM (GMT+4)**	Cisco Enabling Secure MultiCloud across your Organization
Tuesday, 9 June 2020 **11:00 AM (GMT+4)**	AppDynamics and CWOM – Driving Transformation Across the Stack

© 2019 Cisco and/or its affiliates. All rights reserved.

Cisco HyperFlex and Cohesity

Deliver a Public Cloud like Experience On-Premise

Bilal Sherrief – Cisco
Technical Solution Architect
Data Center and Cloud

Mohanad Abakar - Cohesity
Technical Solution Architect
Cohesity MEA

Trends Driving Data Center Modernization

Applications are Evolving

- Refactoring and cloud native need modern architectures and capabilities
- ML, AI, and Analytics placing new demands

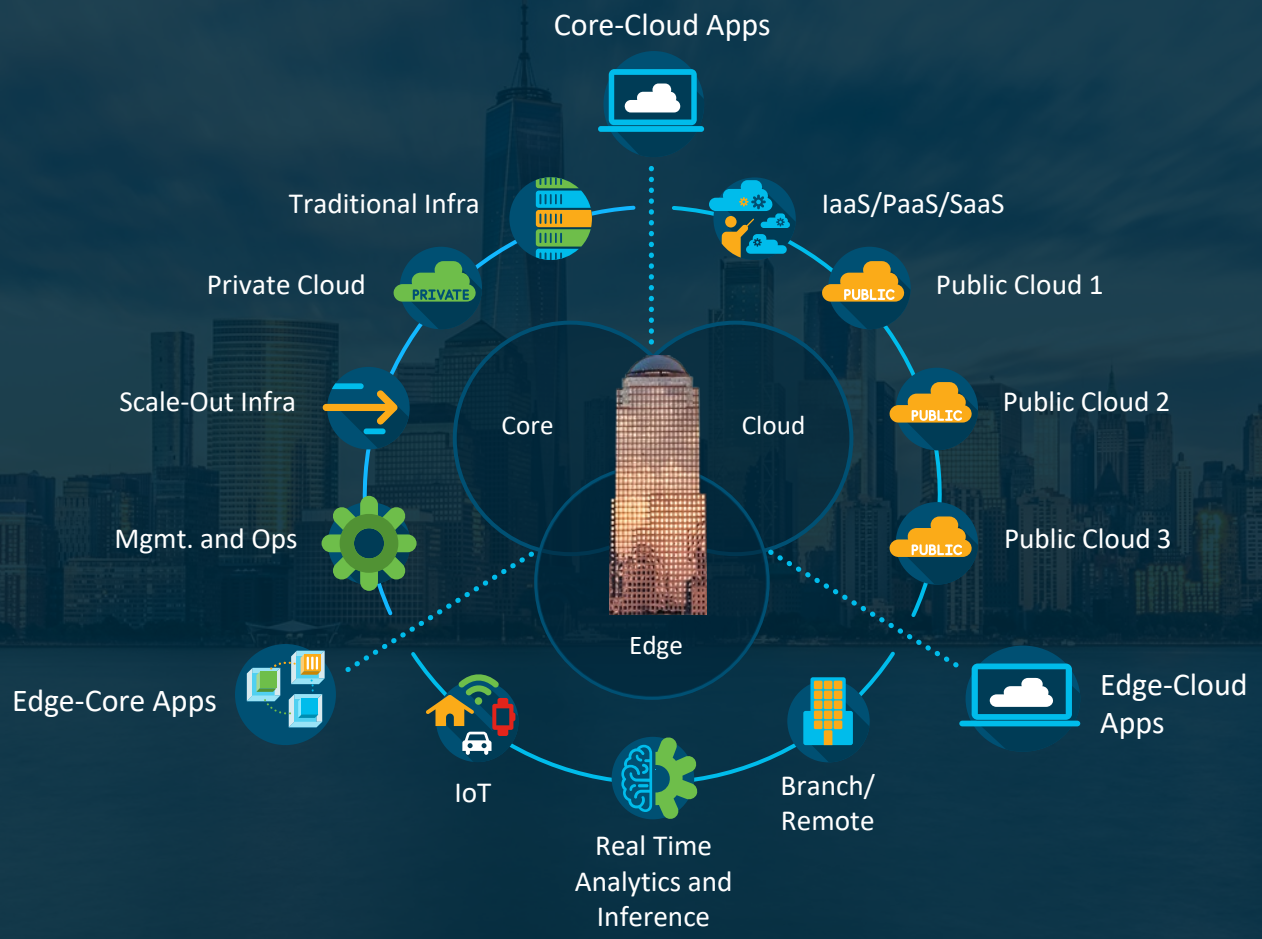
Workloads are more Distributed

- Require flexible placement, increased performance, and enhanced monitoring
- Increased attack surfaces and blind spots

Developers Demand Multicloud Flexibility

- Unprecedented app development speed and scale
- IT complexity driven by inconsistent buying options

There is nothing **“CENTER-ED”** about data anymore



Datacenter Modernization

Your bridge to the Future

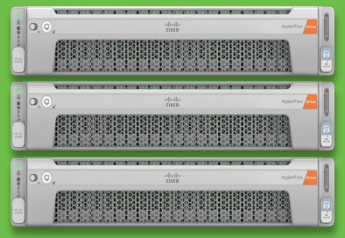
Traditional Infrastructure

Highly Manual Core Operations

Limited Time and Budget
for Future Initiatives

Modernized Hyperconverged Infrastructure

Streamlined and Modernized Core

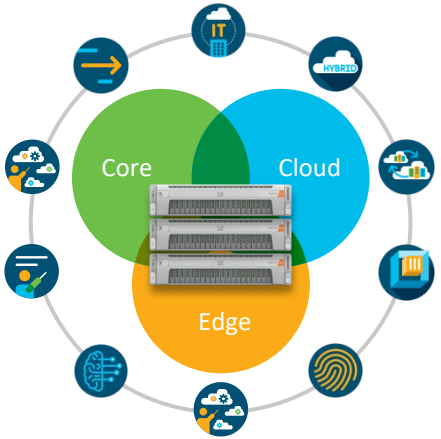


75% Management Time Savings[3]

90% Downtime Reduction[7]

80% Savings vs. 3-tier Infrastructure[1]

Optimized for the Distributed Datacenter

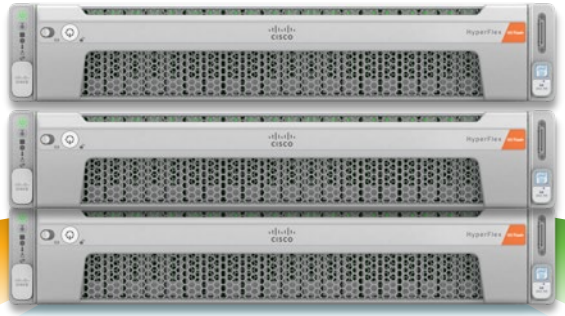


© 2019 Cisco and/or its affiliates. All rights reserved.

What is HyperFlex?
Engineered and Optimized HCI

Performance and Scalability to Power

Any App, Any Cloud, Anywhere



HX Data Platform

- **Purpose Built for HCI**
- **Fast and Flexible**
- **Enterprise Grade Storage**

Cloud Platform

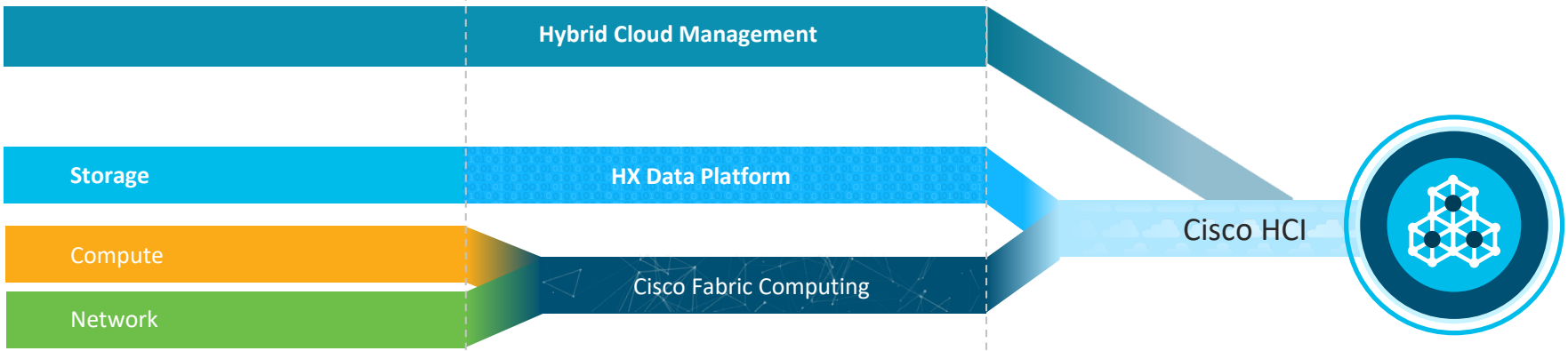
- **Cisco Intersight**
- **Cisco CloudCenter**
- **Cisco Workload Optimization Mgr.**

UCS Foundations

- **Software Defined Compute**
- **Fabric Centric**
- **Intent-Based**

© 2019 Cisco and/or its affiliates. All rights reserved.

Complete Hyperconvergence
Compute, Network, HCI Software Engineered Together



Traditional Infrastructure

Siloed Tiers of Compute, Storage and Networking from separate vendors

Siloed & Disaggregated Management

Cisco UCS Foundations

Converged Compute and Networking System

Cisco HyperFlex

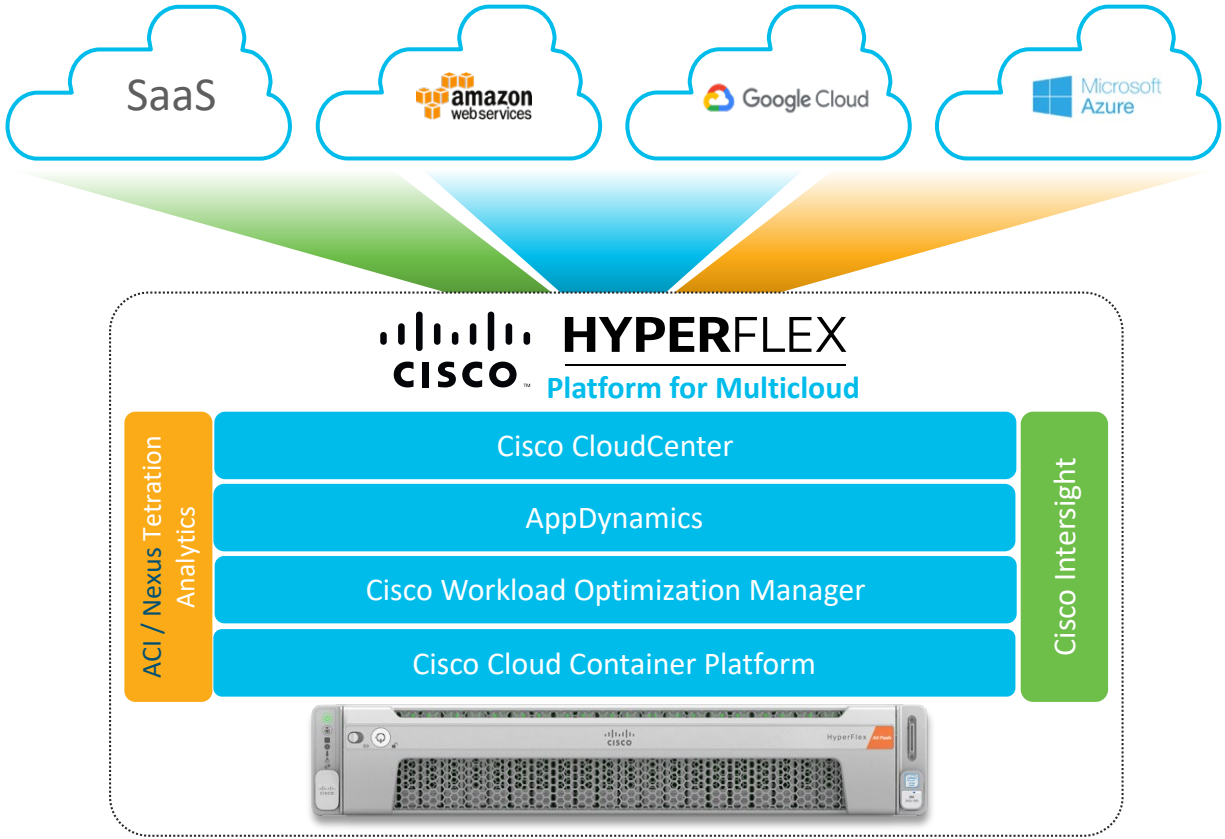
Multicloud Era Hyperconverged Infrastructure

© 2019 Cisco and/or its affiliates. All rights reserved.

Simplified Multicloud Operations

Simplified public cloud consumption

Cloud like experience on-prem



HyperConverged Infrastructure – What is it?

Customer View Point

Back to Overview

Enterprise Application Ready

Enterprises Run Mission Critical Apps on HyperFlex

CITRIX · Exchange · Cisco webex · Microsoft SQL Server · ORACLE DATABASE · ORACLE E-BUSINESS SUITE
Microsoft · SharePoint · Cisco Unified Contact Center · MySQL · SIEBEL · PeopleSoft
vmware · MCKESSON · Epic · MUREX · SAP · kubernetes by Google

Common HCI Apps → Business Critical Apps

#1 in Performance

HyperFlex vs. Equivalent SW-Only HCI on UCS

ESG

Full ESG report: cs.co/hyperflexesg

- **96%** Higher VM Level Performance Consistency
- **3X** Lower Latency for workloads tested
- **3X** IOPS Delivery for workloads tested
- **0%** Performance impact running dedup/compression

Increased End User Experience/Productivity

Increased Application Performance

30% Less:

- Hardware Nodes
- HCI Software Subscriptions
- Hypervisor Licenses
- Power/Cooling
- App Core Licenses
- Op's and Management

Introducing HyperFlex All-NVMe

General Workloads	Complex Mixed Workloads	Databases
28-57% Higher IOPS	66-90% Higher IOPS	66-90% Higher IOPS
22-40% Lower Total Latency	31-39% Lower Total Latency	31-39% Lower Total Latency

© 2019 Cisco and/or its affiliates. All rights reserved.

Cisco HyperFlex Game Changing Results

Test and Development

Virtual Desktop Infrastructure

Server Virtualization

Databases & ERP

ROBO & Edge

Cloud-Native & Kubernetes

Gartner MQ Leader

FORRESTER Wave Leader

THE CHANNEL CO. CRN Products of the YEAR 2019

4200+ Customers Are Saying:

3x Lower Latency vs Competitive HCI[1]

50% Improvement in ERP Response Time*[5]

30% More Performance for Mission Critical Apps*[4]

91% Downtime Reduction[1]

50% Lower Cost of Operations[2]

80% Savings vs. 3-tier Infrastructure*[1]

75% Management time savings*[3]

51% Savings vs. Public Cloud Over 3 years*[2]

© 2020 Cisco and/or its affiliates. All rights reserved.

1: 2019 ESG, Mission-critical Workload Performance Testing of Cisco HyperFlex All-NVMe with Intel Optane SSD on the Cisco Unified Computing System Platform (UCS)
2: 2019, IDC Business Value of Improved Performance and Agility with Cisco HyperFlex
*See BDM deck for sources from customers

Cisco HyperFlex Rapid Pace in Leadership

From Launch to an
HCI Magic Quadrant Leader in

2.5 years

© 2020 Cisco and/or its affiliates. All rights reserved.

Gartner, Magic Quadrant for Hyperconverged Infrastructure, 27 November 2018. *Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally, and is used herein with permission. All rights reserved.*

HyperFlex Application Platform

Ready-to-Consume Container Platform for App Modernization

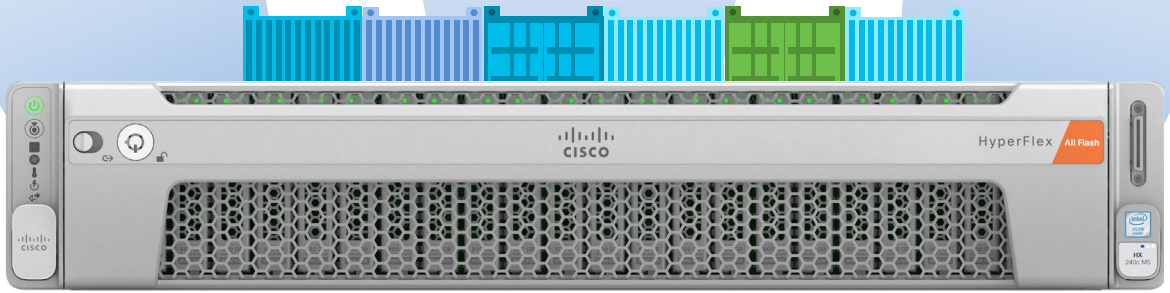
Curated Stacks

OS/KVM, VMs, containers,
K8s CNI/CSIs, bare metal

Public Cloud Integrations

Common Infra & Dev Environments

DevOps-focused for increased code release velocity



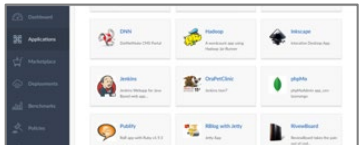
© 2020 Cisco and/or its affiliates. All rights reserved.

HyperFlex with CloudCenter

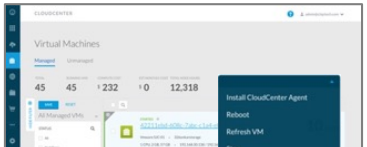
Deliver Cloud Experience to Meet Business Needs

Model

Deploy



Manage



© 2019 Cisco and/or its affiliates. All

Back to Overview

Next Generation Management

Centralized Cloud-Based Management of the Future

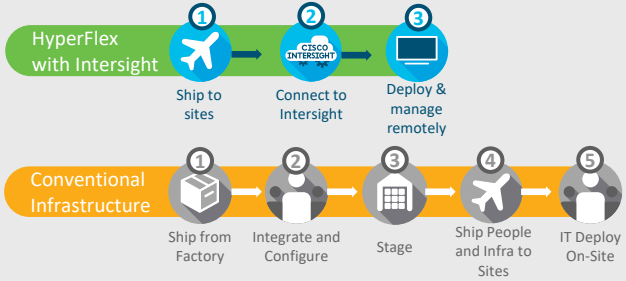
- Telemetry and Analytics
- Policy Based Orchestration
- Secure and Compliant
- API Driven, DevOps Enabled
- Connected TAC

Cisco Intersight

SaaS Simplicity

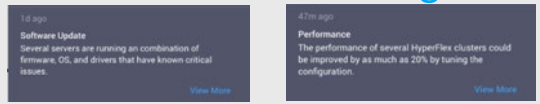
Actionable Intelligence

Remotely Deploy & Manage



Compatibility(HCL) Check

Recommendations Engine



© 2019 Cisco and/or its affiliates. All rights reserved.

Cisco Intersight Workload Optimizer

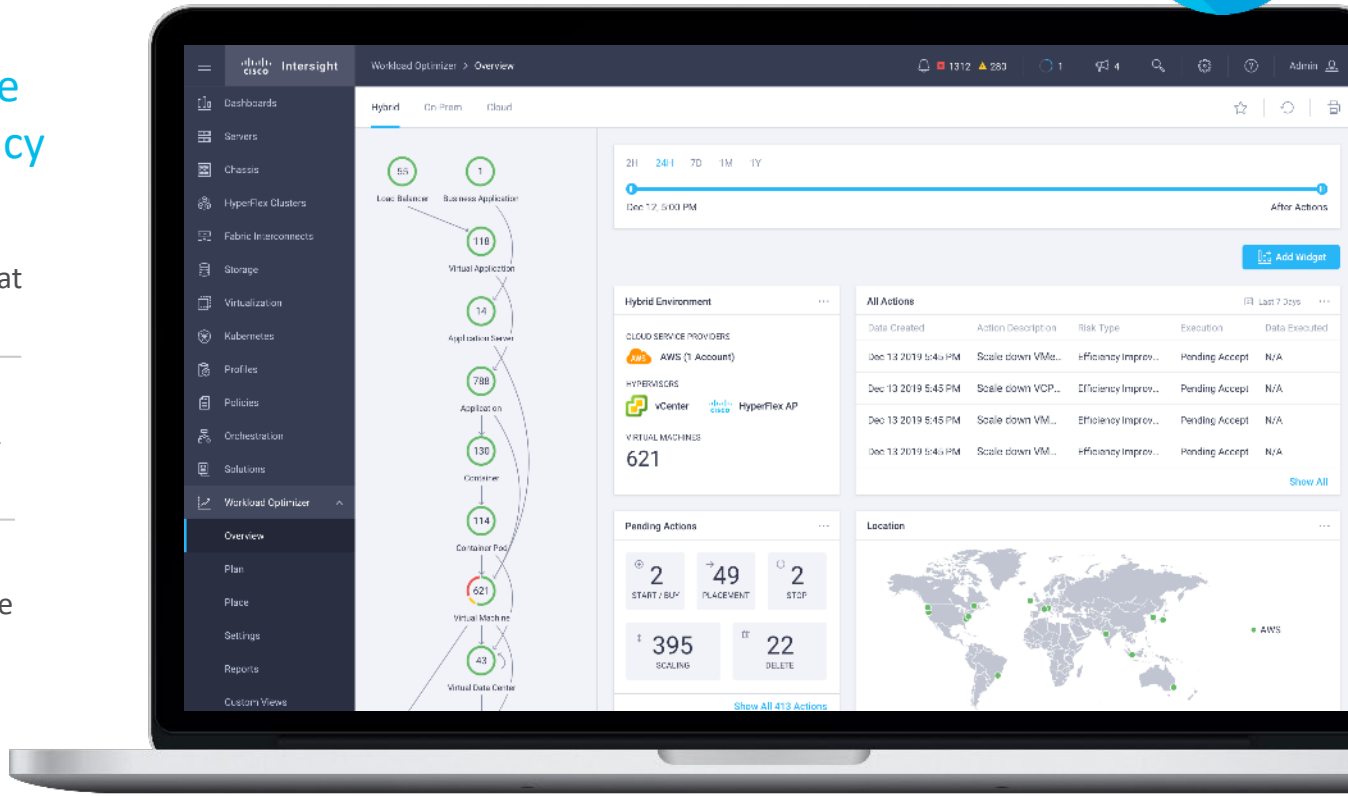
NEW

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



© 2019 Cisco and/or its affiliates. All rights reserved.

UCS: One Architecture for Operational Simplicity

Unified Computing System

UCS Management | **Intersight** | **IMC Supervisor**

Mainstream Computing | Converged Infrastructure | Hyperconverged Infrastructure | Software-Defined Storage | Scale Out

EDGE — CORE DATA CENTER — CLOUD

© 2019 Cisco and/or its affiliates. All rights reserved.

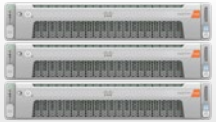
HCI with Converged Fabric Networking

1. Network Integrated HCI
2. Policy Based Management
3. End-to-End HCI Automation

HX220C
Highest Performance
(Performance Critical)

+

HX220C
High Performance in Small Footprint
(Databases, VDI, VSI)



HX240C
High Density with Performance
(Databases, VDI, VSI, Test/Dev)

+

HX220C & EDGE
Smallest Footprint
(VDI, VSI, ROBO)

HX240C
Capactiy-Heavy
(VDI, VSI, Test/Devy)

+

40/ 25 / 10 GBPS
UCS FABRIC NETWORKING
90+ Nodes, Single Fabric,
Single Management Domain

HYBRID CLUSTER ALL FLASH CLUSTER ALL NVME CLUSTER

© 2019 Cisco and/or its affiliates. All rights reserved.

The Cisco HX Data Platform

HX LOG STRUCTURED FILE SYSTEM
DESIGNED SPECIFICALLY FOR HYPERCONVERGENCE

DISTRIBUTED

Object-Based File System Architected for Scale-Out, Distributed Storage

ADVANCED DATA SERVICES

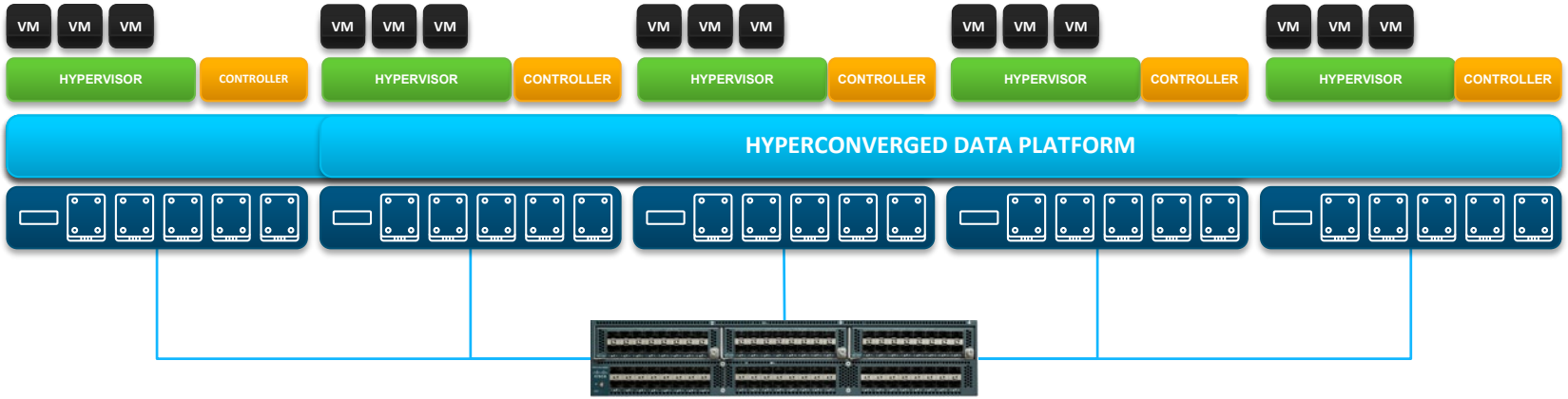
Built Into File System Architecture

FUTURE READY

Designed for Containers and Next-generation Applications

© 2019 Cisco and/or its affiliates. All rights reserved.

Hyperconverged Scale Out and Distributed File System



Start with as Few as Three Nodes

Hyperconverged Data Platform Installs in Minutes

Network Fabric Policy Configures QoS Settings

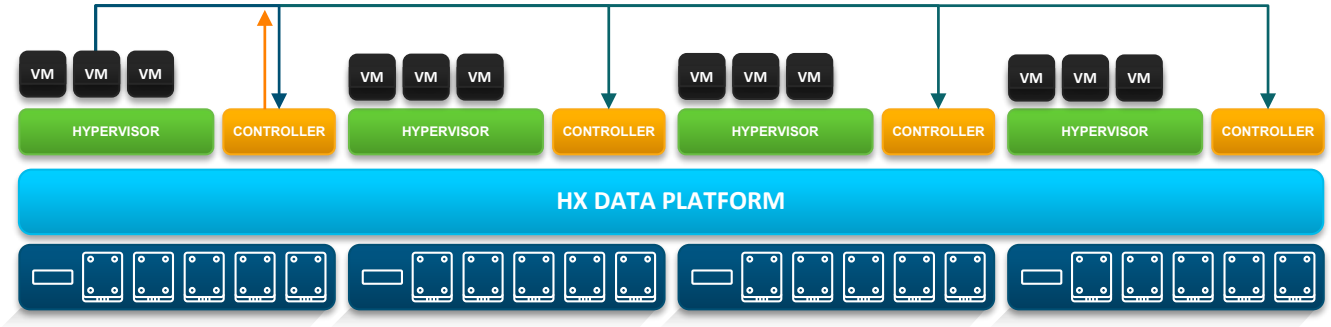
Add Servers, One or More at a Time

Distribute and Rebalance Data Across Servers Automatically

Retire Older Servers

© 2019 Cisco and/or its affiliates. All rights reserved.

Dynamic Data Distribution



Systems Built on Conventional File Systems Write Locally, Then Replicate, Creating Performance Hotspots

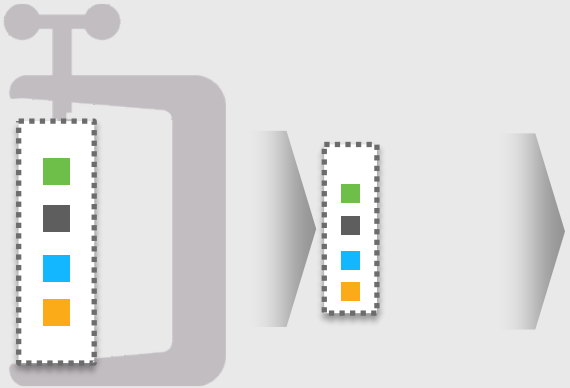
HX Data Platform Stripes Data Across All Nodes Simultaneously, Leveraging Cache Across all SSDs for Fast Writes

Balanced Space Utilization: No Data Migration Required Following a VM Migration

© 2019 Cisco and/or its affiliates. All rights reserved.

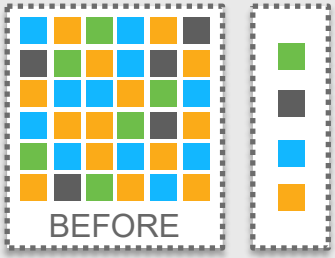
Continuous Data Optimization

Log-Structured File System Yields More Efficient Data Optimization



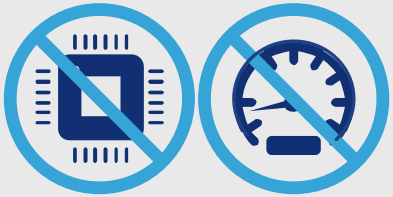
Inline Compression

30–50% space savings



Inline Deduplication

20–30% space savings



No Special Hardware

No Performance Impact

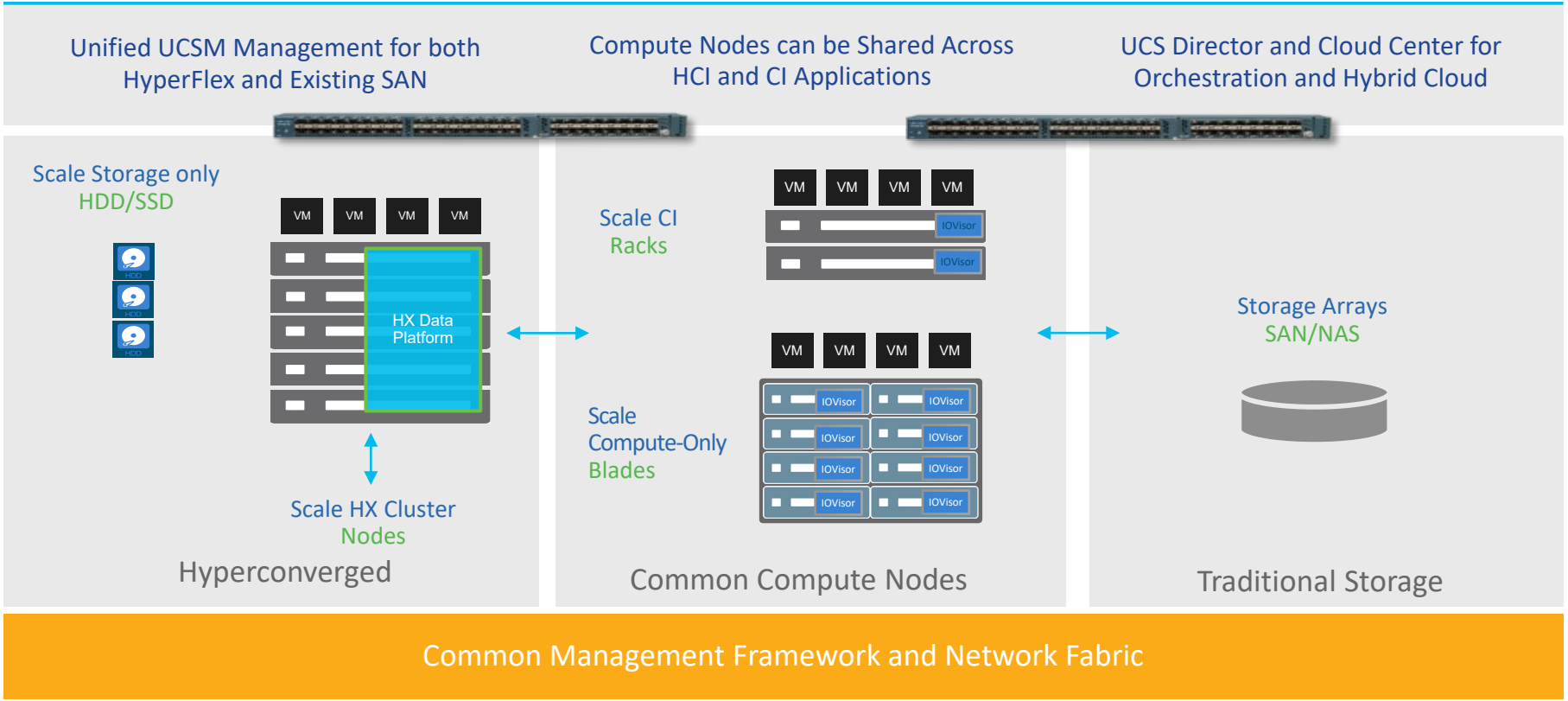
No Config lock-in

No Additional License

Lower Cost

© 2019 Cisco and/or its affiliates. All rights reserved.

Adaptive Infrastructure



IDC Report HyperFlex Customer Results

Lower Cost

452% five-year ROI

50% lower cost of operations

8 months payback

Increased Agility

91% less unplanned downtime

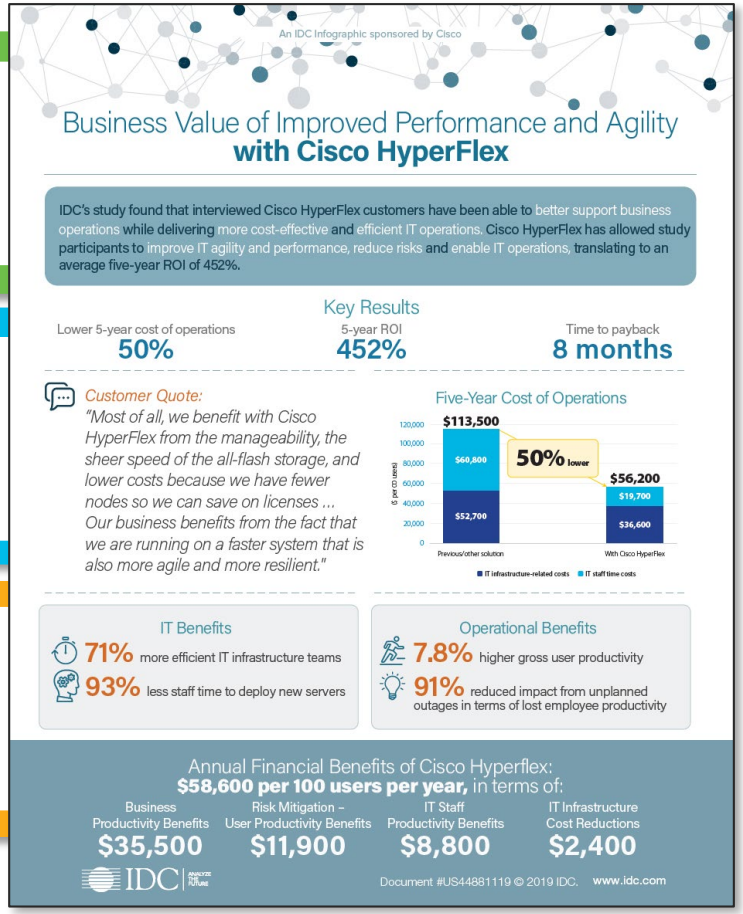
50% faster development life cycle, new features

More Efficiency

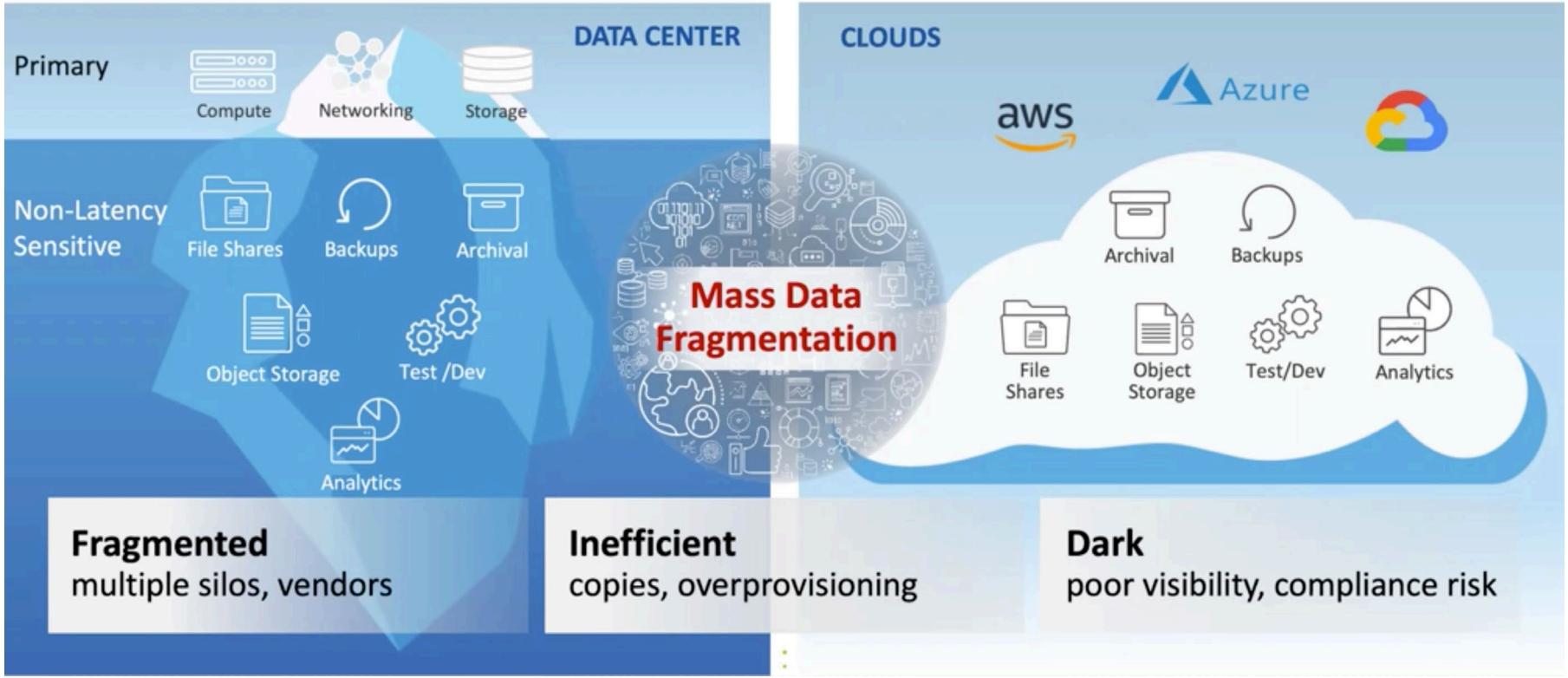
71% more efficient IT infrastructure teams

93% less staff time to deploy new servers

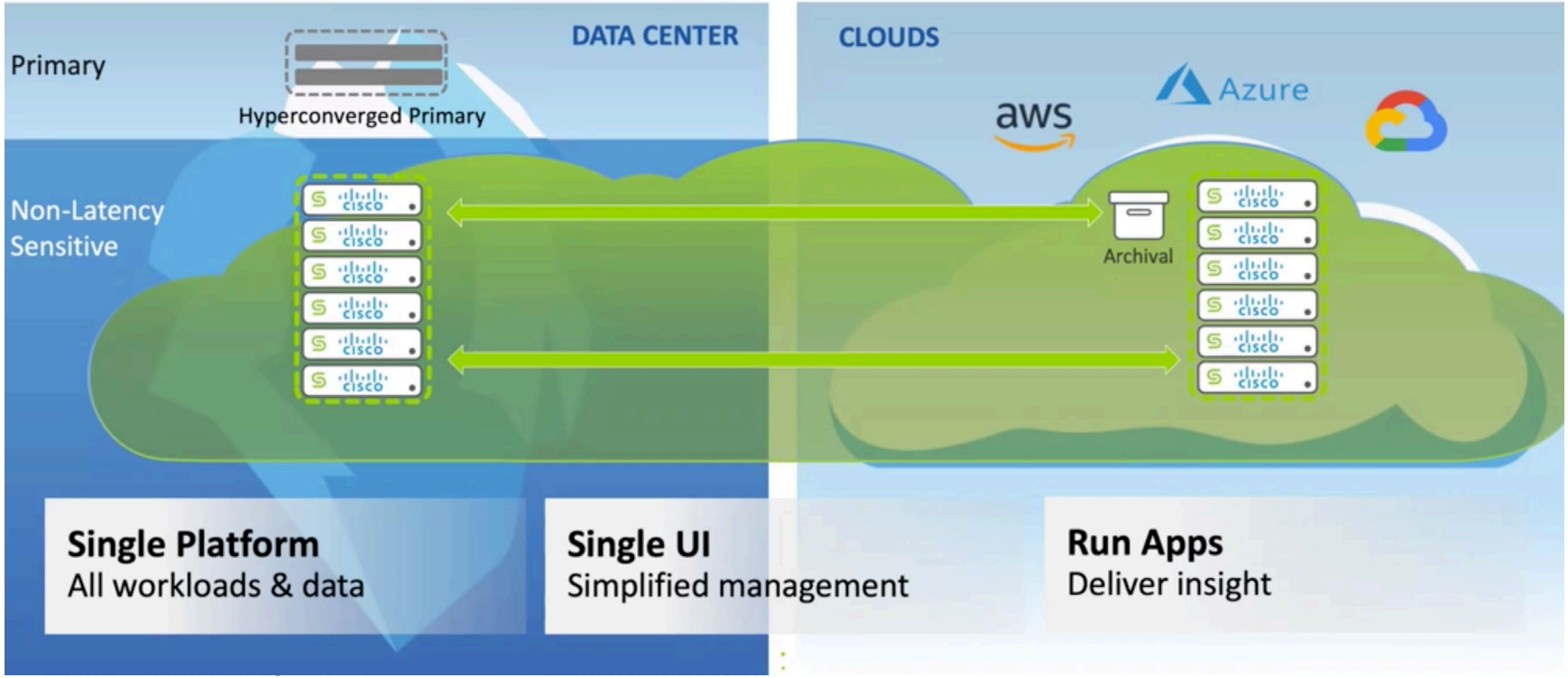
Read the full report: http://cs.co/HyperFlexIDC



The Problem – Mass Data Fragementation



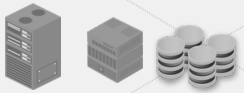
Consolidate Workloads on a Single Platform



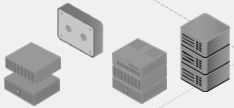
Eliminate Silos, Consolidate Data & Workloads

Backup Software

Target Storage



Servers & Media



Files & Objects

Cloud Gateways

COHESITY

The New Architecture for Data Management

Run Apps & Services
- Move compute to data

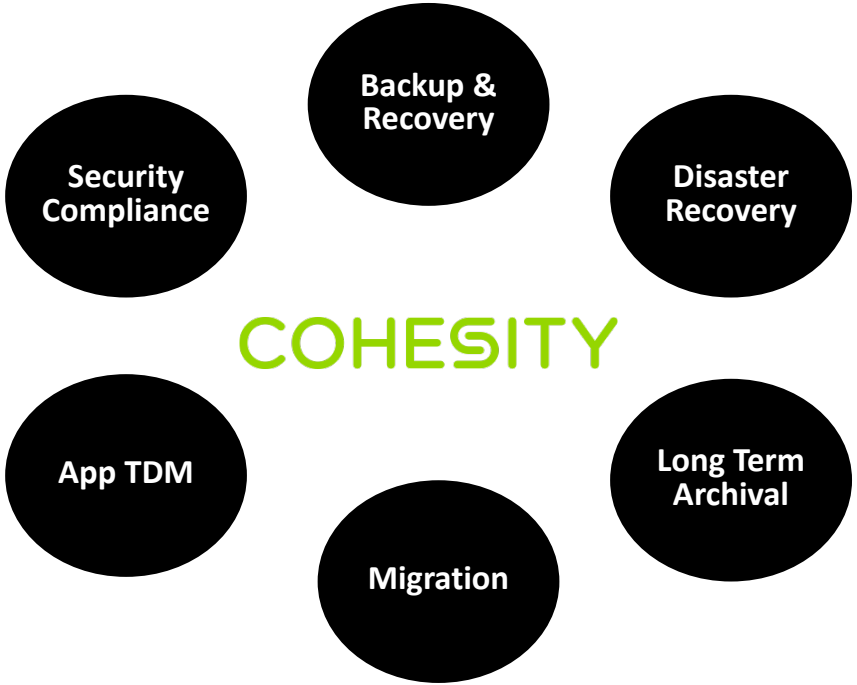
One UI
- Simple global management

One Platform
- All workloads & data

- Cohesity MarketPlace
- Helios
- DataPlatform powered by SpanFS™

COHESITY

Supported Use Cases

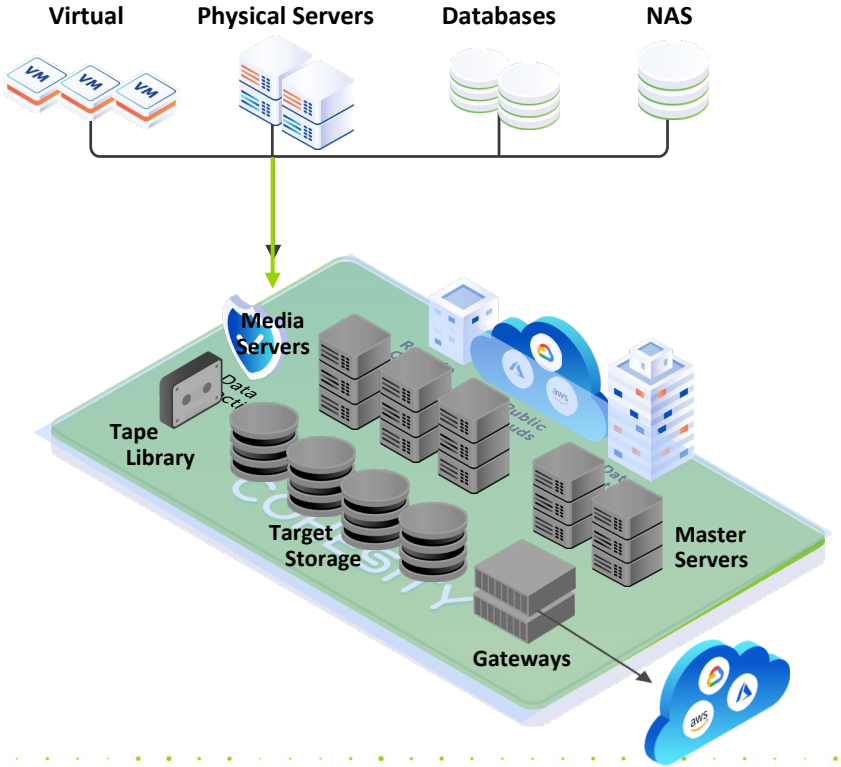


Start Your Data Management Journey

Protect, Control & Leverage Your Data

- Modernize backup & recovery
- Consolidate file & object services
- Embrace public cloud with native integrations
- Eliminate mass data fragmentation

Data Protection with Cohesity

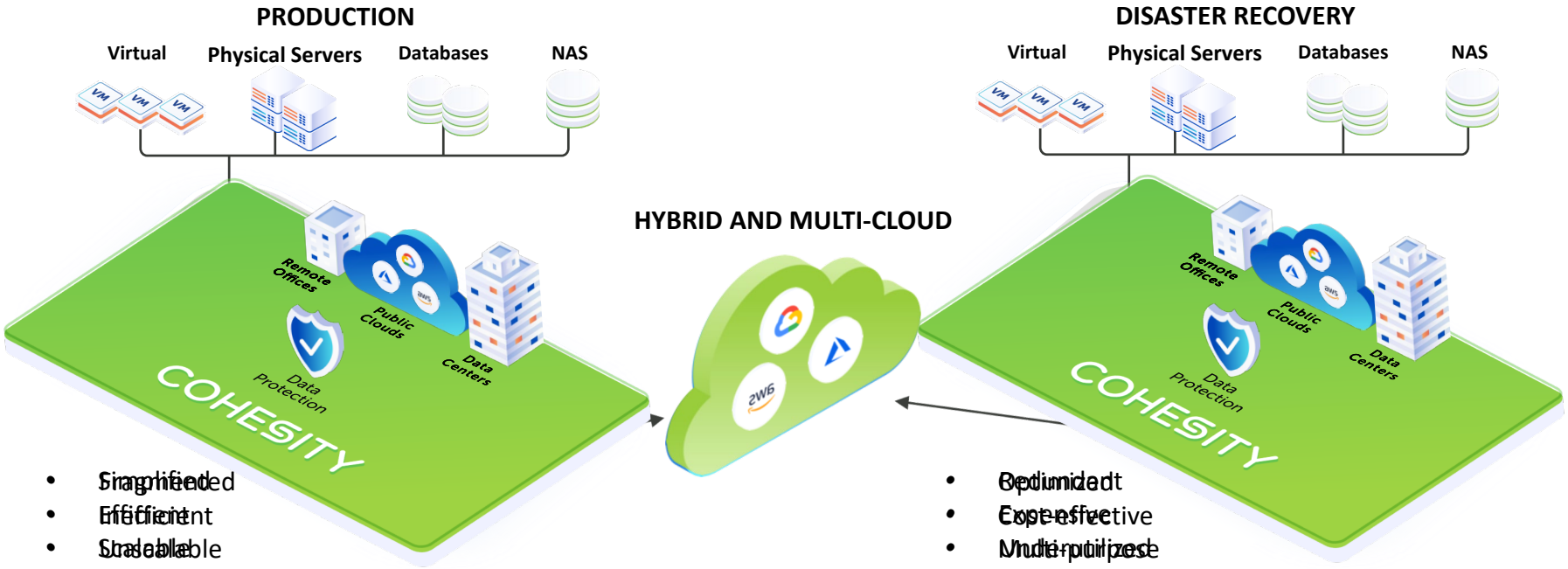


Modernize Backup & Recovery

- Fast distributed ingest
- Instant mass restore from any backup
- WORM for security, ransomware protection
- Global dedupe across workloads

COHESITY

Redefining Data Protection



- Simplified
- Efficient
- Scalable

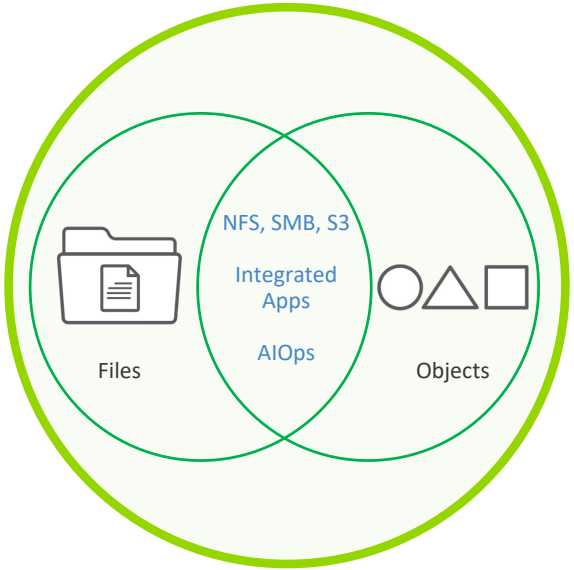
- Optimized
- Cost-effective
- Multi-purpose

COHESITY

Cohesity SmartFiles

API-driven design

Fully distributed web-scale shared-nothing file system



File and object protocols Unified permissions

Software-Defined Freedom

Built into Cohesity DataPlatform

Enterprise File and Object Services

Multi-Protocol

- NFS, SMB, S3, Swift
- Native and Unified modes, NTFS style permissions
- AD, LDAP, Local admin groups

Built-in Data Protection

- Unlimited snapshots
- Replication
- DR automation
- Cloud Archive
- DataLock

Data Efficiency

- Inline global variable length dedupe
- Compression
- Small file efficiency

Data Management

- Multi-tier management
- Writable snapshots
- Quotas
- CloudTier
- API-driven

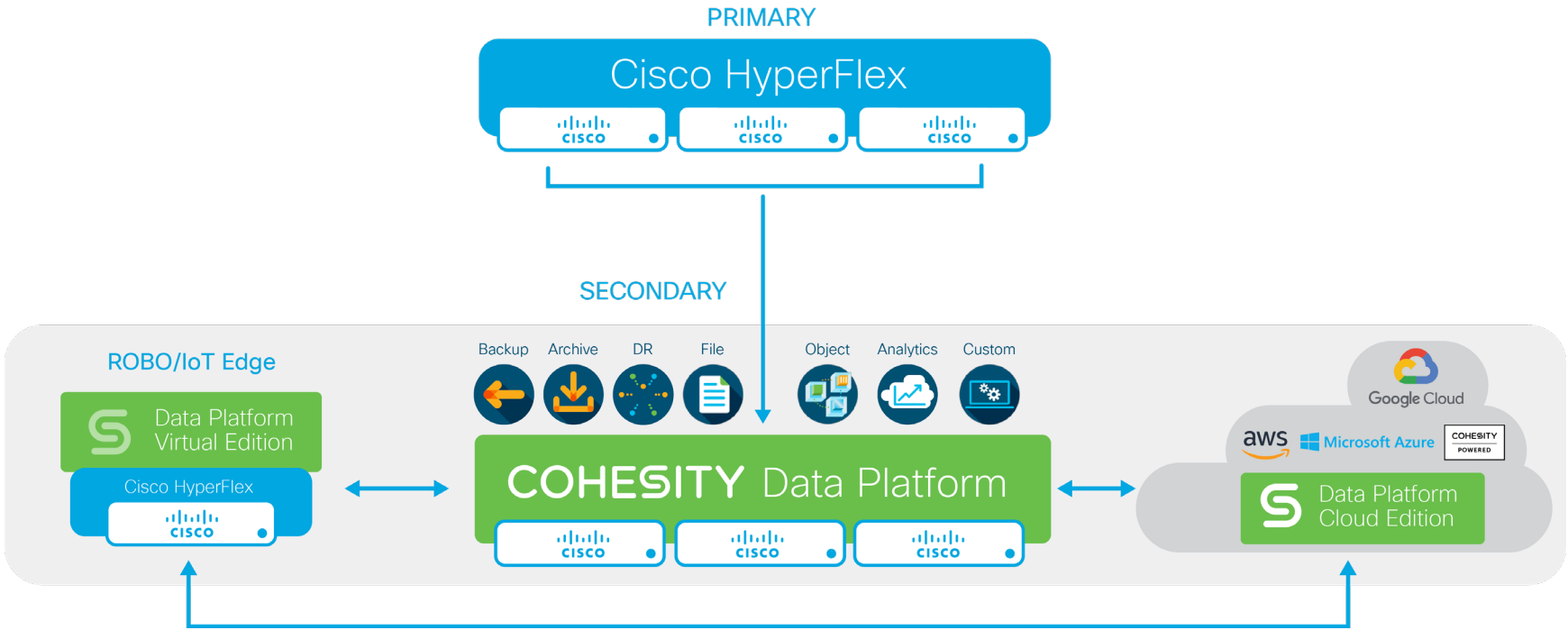
Security

- Software based encryption
- Multi-Factor Authentication
- FIPS 140-1 and 140-2
- Cluster and filer audit logs

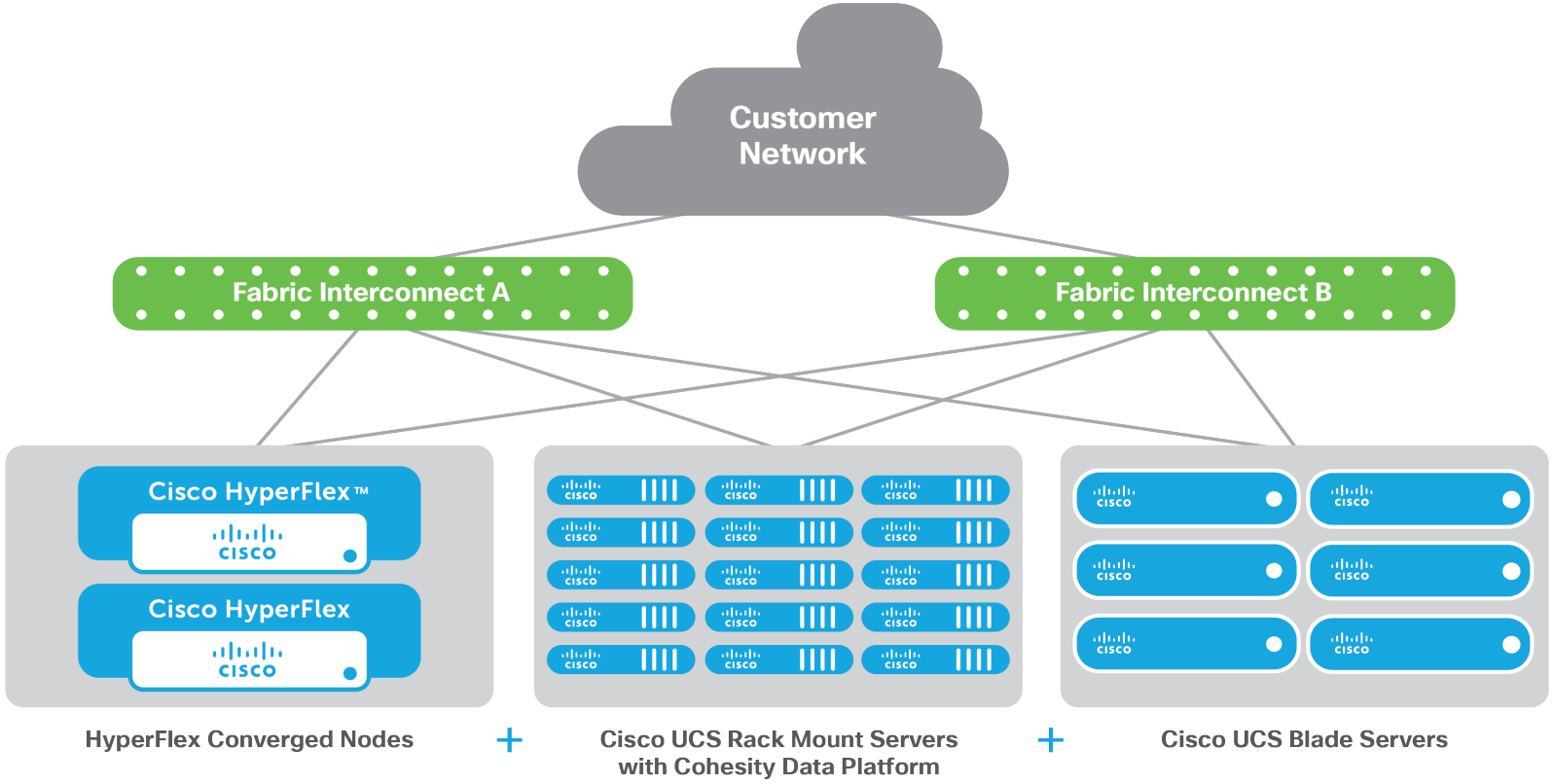
Built-in Apps

- Insight - Data search
- Spotlight - Audit log analysis
- ClamAV - Anti-virus scan
- 3rd party apps

Cohesity and Cisco Hyperflex™



Cohesity on Cisco UCS®



We Challenges the Status Quo

Lower TCO

- Hyperconverged Data Management
- Storage Consolidation
- Pay-as-you-Grow Scalability

Improved SLAs

- Scale-out Ingest
- Instant Recovery at Scale
- Global Search

Operational Efficiency

- Engineered Software-defined Solution
- Non-disruptive Upgrades
- Centralized Management

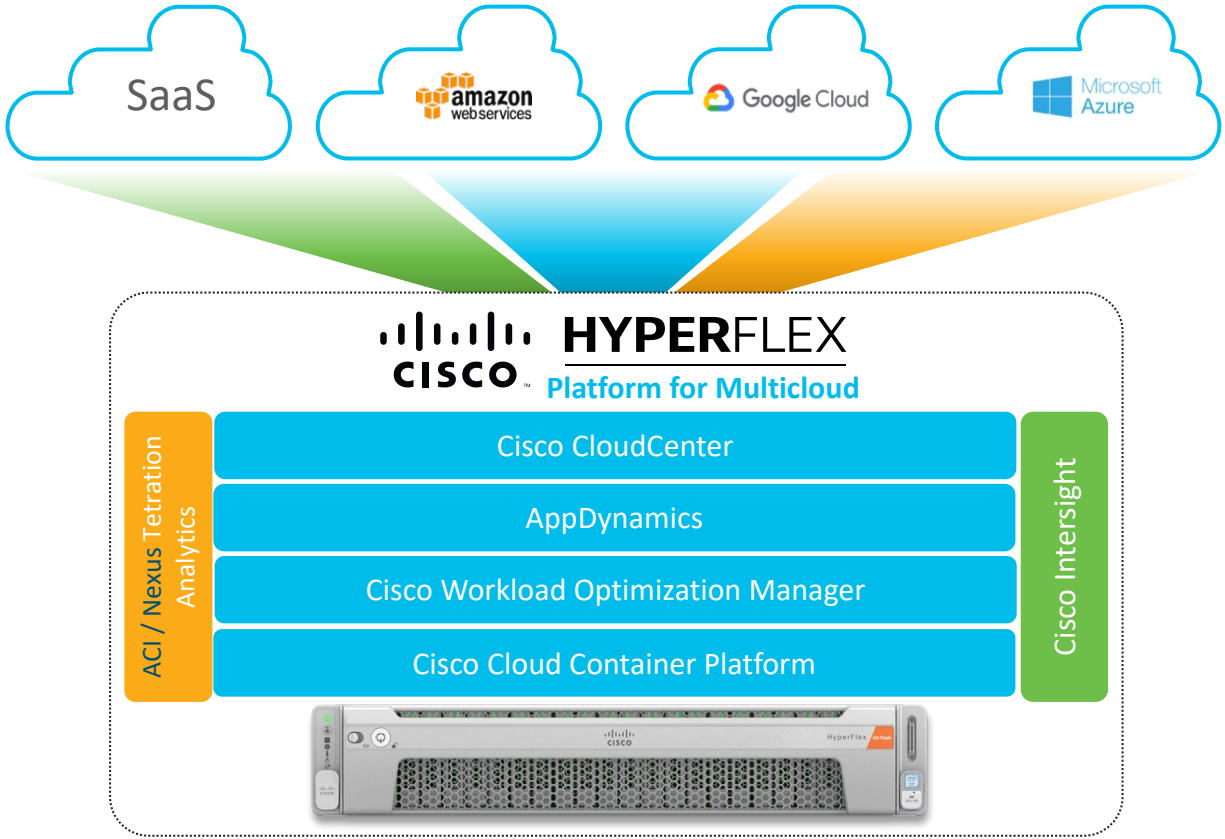
Data Security

- Simplified Architecture
- Ransomware Detection and Recovery
- DataLock for WORM
- Granular RBAC

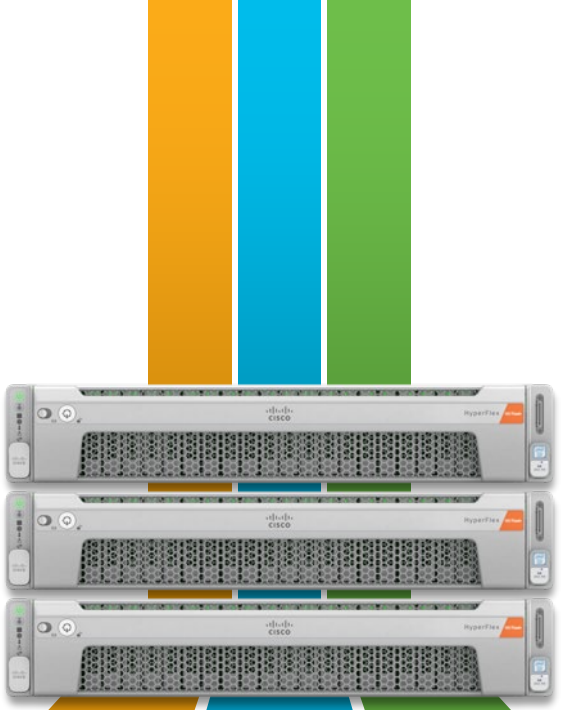
Simplified Multicloud Operations

Simplified public cloud consumption

Cloud like experience on-prem



Thank You



CISCO

HyperFlex Performance Drives Business Outcomes

96% Higher VM Level Performance Consistency

3X
Lower Latency for workloads tested

3X
IOPS Delivery for workloads tested

0% Performance impact running dedupe/compression

Increased End User Experience/ Productivity

Increased Application Performance
E-Commerce SLA's

30%
Less

- Hardware Nodes
- HCI Software subscriptions
- Hypervisor Licenses
- Power Cooling
- App core licenses
- Op's and Management

Read the full report at:
cs.co/hyperflexesg

© 2020 Cisco and/or its affiliates. All rights reserved.