

FlexPod and You

Navigating to and thru the core of the Modern DataCenter

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Neurology of a FlexPod - Application Domination

Part II – Network is always the problem.
Dissecting the Tools of trade to visualize
and understand the path of the packet

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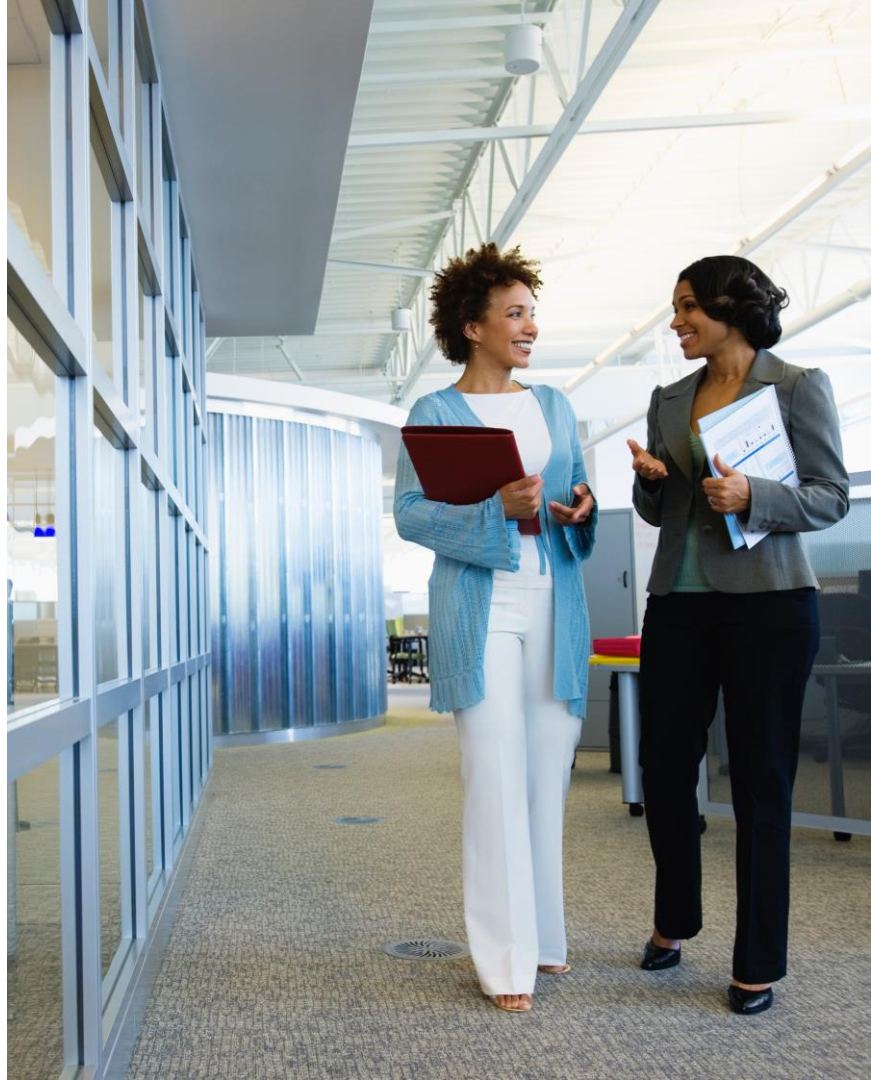


Course Modules

This course focuses on enabling you to do the following:

Module 8:

- Understanding modern visualization tools.
- NetApp ONTAP Connector for Cisco Intersight
- Understanding tools with modern telemetry capabilities and handle pro-active and re-active scenarios in real time.



FlexPod Value



#1

Most trusted



Strong partnership

10-year track record



Proven results

190+ CVDs



Secure foundation

Future-proof



Cloud integrated

- Tiering, data protection, cloud services

Modern workloads and enterprise apps

- AI and ML, Oracle, SAP, SQL Server
- containers, Kubernetes

Fifth-generation compute

- Intel and AMD servers
- Intel Optane memory
- NVIDIA GPUs

High-speed fabric

- 100GbE/32Gb Fibre Channel
- NVMe over fabric

All-flash storage with end-to-end NVMe

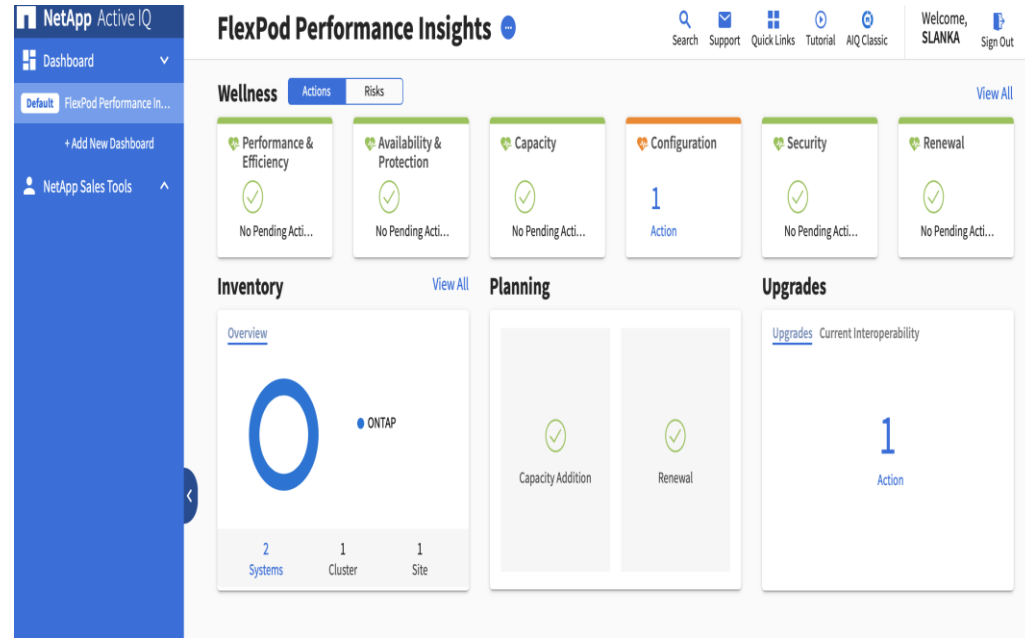
- Virtualized, bare-metal
- Built-in encryption

Single-vendor support

- Cloud-based monitoring
- Intersight integration

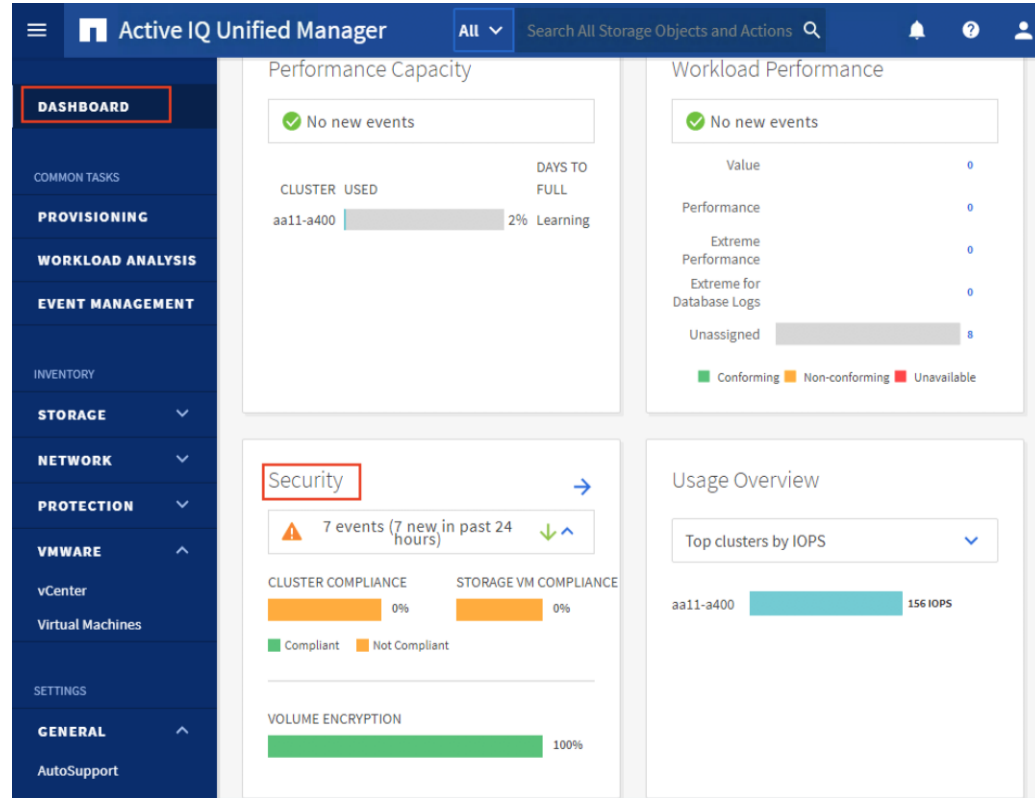
ActiveIQ

Active IQ offers an enhanced User Interface and a personalized experience with AIQ Digital Advisor Dashboards.



ActiveIQ Unified Manager

- comprehensive monitoring and proactive management tool.
- a new security risk panel.
- provides API offerings for storage management through RESTful API service interface for third party integration.



Virtual Appliance 9.7.1 for vSphere 7

Virtual Storage Console (VSC)

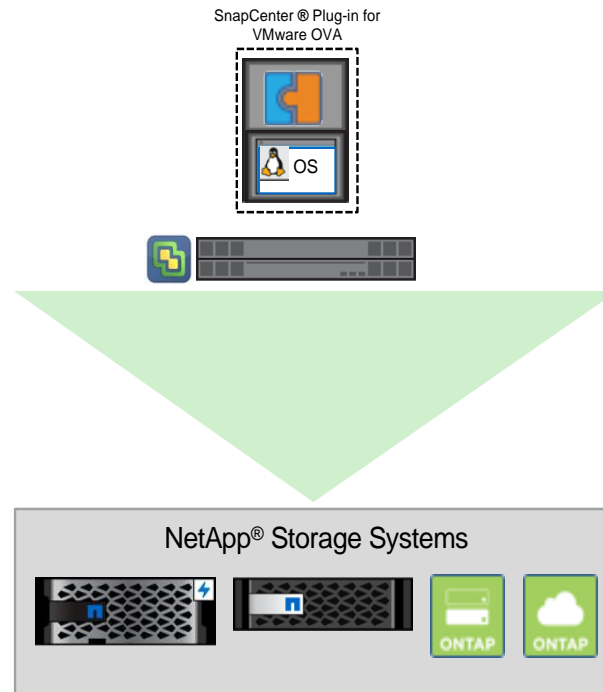
VASA Provider

Storage Replication Adapter
(SRA)

- Improved performance for large scale environments
- Configuration of ONTAP role-based access control (RBAC) by using ONTAP System Manager
- Use of ONTAP REST APIs to obtain vVols metrics for SAN storage systems that use ONTAP 9.7 and later releases, so that NetApp OnCommand® API Services is no longer required
- SRA support for Site Recovery Manager Appliance (Photon OS-based) as well as Windows based version

SnapCenter Plug-in for vSphere 7

- Easily back up VMs and datastores from vSphere
- Restore or mount from primary or secondary storage
- Create and reuse policies
- Centralized job monitoring and reporting



Infrastructure Operations Challenges



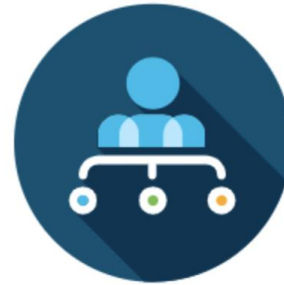
Distributed apps and IT

Physical and virtual sprawl,
IoT, microservices



Human limitations

Scale, speed, complexity
that make modern data centers
unmanageable



Traditional management

“Building a monster
to manage the monster”

Strategy for Next-Generation Systems Management



Use the cloud

Connect everything



Analyze
the telemetry

Create actionable insight



Combine insight
with automation

Have machines
manage machines

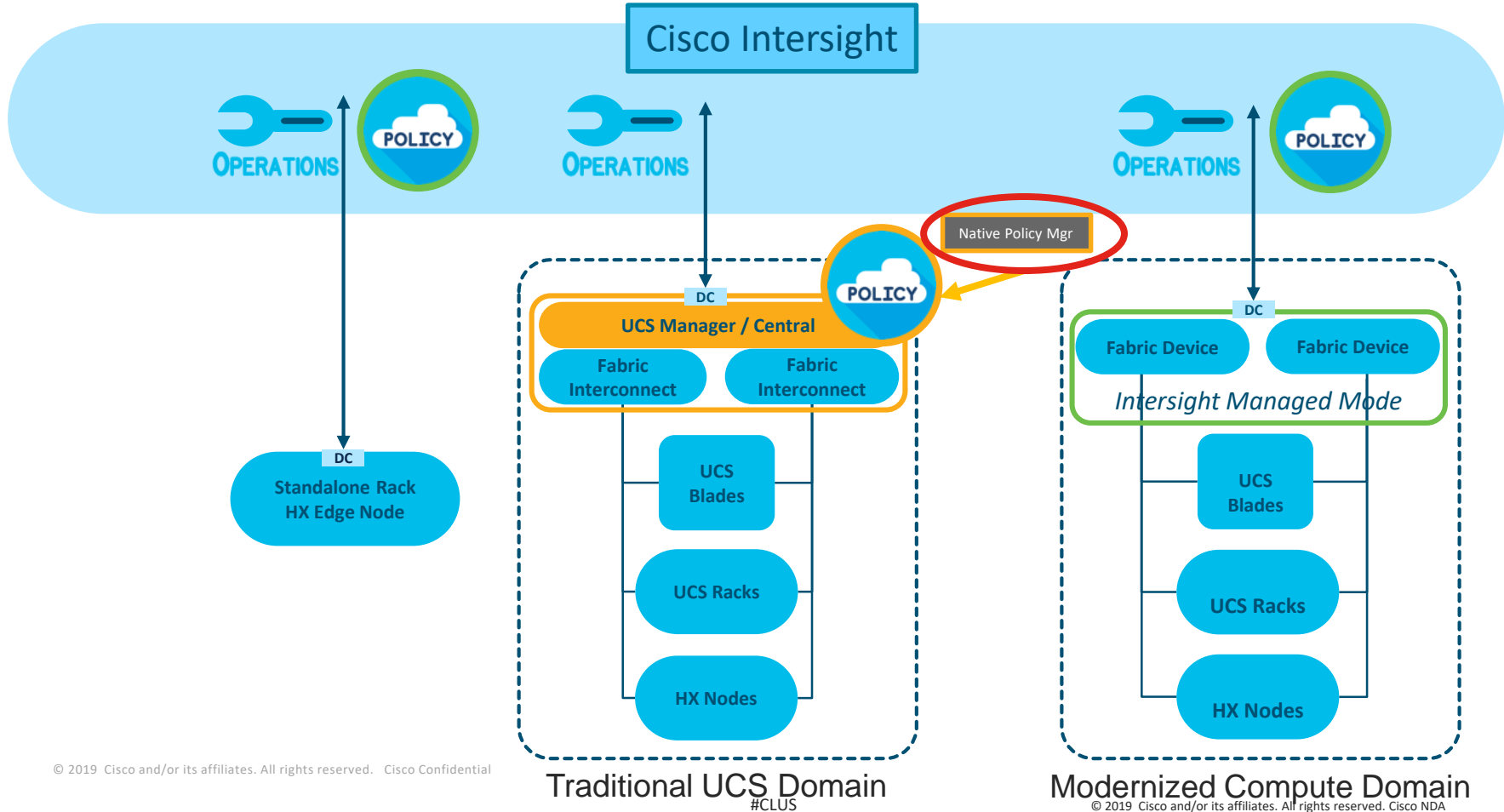
Cisco Intersight

Cloud operations platform



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

Intersight Managed Mode



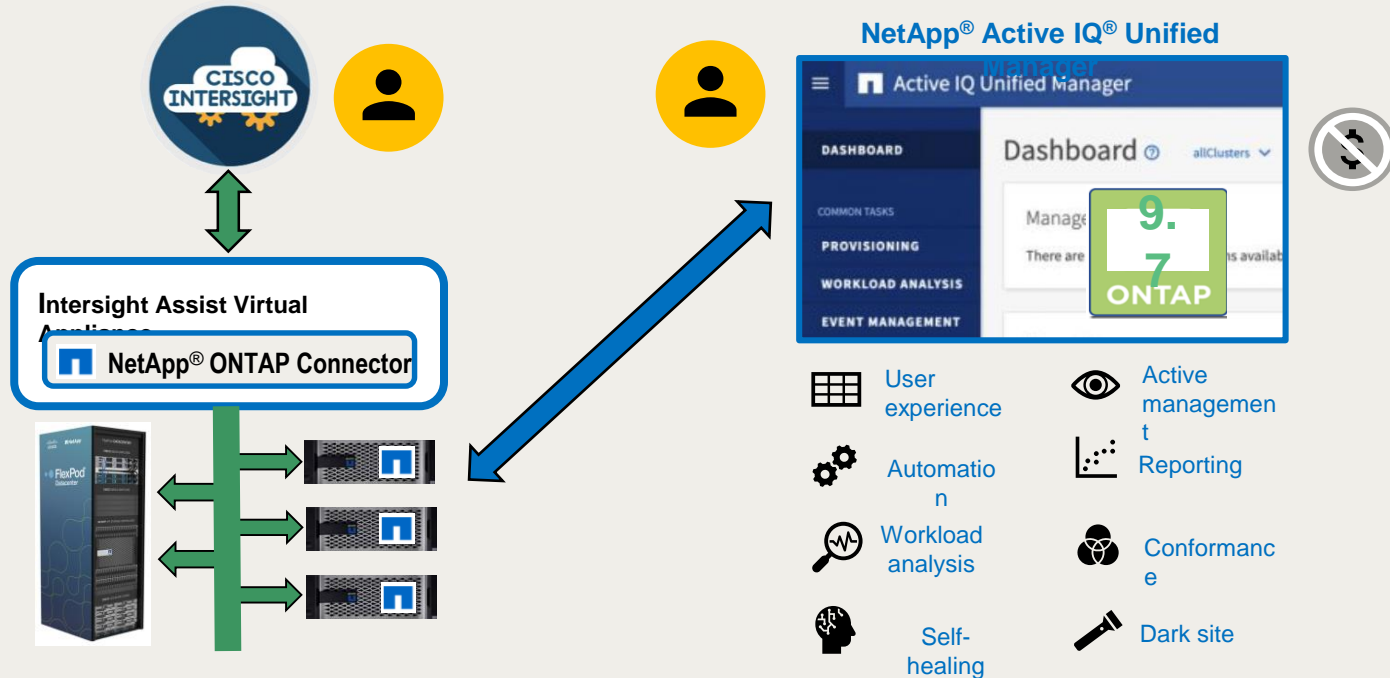
NetApp ONTAP Storage Integration with Cisco Intersight



Intersight and Active IQ Unified Manager

FlexPod and NetApp ONTAP storage management

Complementary Solutions: Intersight and AIQUM



Intersight-ONTAP Tasks



NetApp® ONTAP® task	Task description
Add storage export policy volume	Add export policy to a volume
Add storage initiators	Add initiators to an iGroup in a SVM
Expand storage LUN	Expand an existing LUN in a SVM
Expand storage volume	Expand an existing volume in a SVM
New storage export policy	Create new export policy and client match list
New storage FC interface	Create a new logical FC interface in a SVM
New storage IP interface	Create a new logical IP interface in a SVM
New storage LUN MAP	Map an iGroup to a LUN
New storage LUN	Create a new storage LUN
New storage NAS volume	Create new storage volume with NAS mount path
New storage SAN volume	Create new storage volume
New storage virtual machine	Create new SVM
New storage initiator group	Create storage initiator group
Remove storage export policy	Remove export policy from SVM
Remove storage initiator group	Remove iGroup from SVM
Remove LUN	Remove LUN
Remove storage LUN map	Remove iGroup map to a LUN
Remove storage NetApp volume	Remove NetApp volume
Test storage iGroup LUN map	Test to check if the selected iGroup name is mapped to LUN

Virtualization task	Task description
New hypervisor cluster	Add cluster to a selected hypervisor
New hypervisor datacenter	Create a new data center on a selected hypervisor
New hypervisor host	Add host to a selected hypervisor
New NFS datastore	Create new datastore on hypervisor
New VMFS datastore	Create new datastore on a selected hypervisor
New Virtual Machine from Template	Create VM on selected hypervisor based on template
Confirm OVA or OVF Installation	Monitor progress of VM installation from OVA, OVF
Confirm VM provisioning	Monitor progress of VM installation from template
Deploy VM from OVA or OVF	Deploy VM on selected hypervisor
Expand hypervisor datastore	Expand Datastore to the full extent on hypervisor.
Find hypervisor storage	Scan host on select hypervisor to find new volume/storage device
Get hypervisor datastore	Get details of a datastore
Customize guest for Linux	Guest customizations for a Linux VM
Customize guest for Windows	Guest customizations for a Windows VM
Remove hypervisor cluster	Remove Cluster from selected hypervisor
Remove hypervisor data center	Remove Datacenter from selected hypervisor
Remove hypervisor host	Remove host from selected hypervisor
Remove VMFS datastore	Remove datastore from selected hypervisor
Rename hypervisor datacenter	Rename a datacenter selected hypervisor

Intersight-ONTAP Workflows

Reference Workflows



Pre-Defined

Create / Update / Remove hypervisor datastore

Create / Upgrade / Remove storage host

Create VM on hypervisor datastore

Create Storage Virtual Machine (SVM)

Create / Remove Export Policy

Create New SVM Logical Interfaces

Custom Workflows



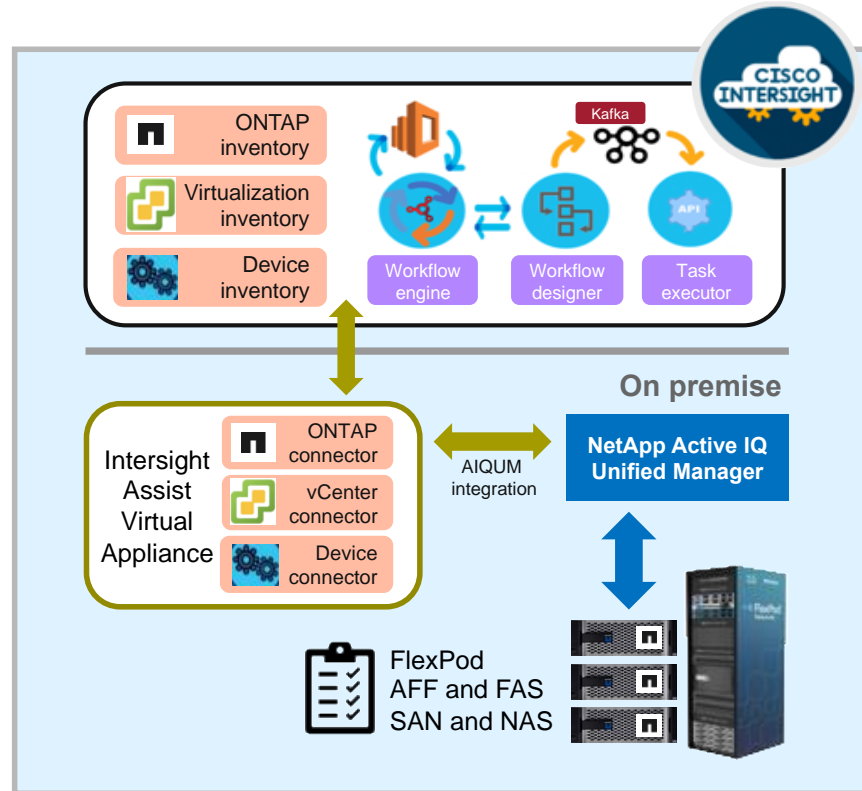
Designed
by Customers

NetApp ONTAP and Cisco Intersight Integration



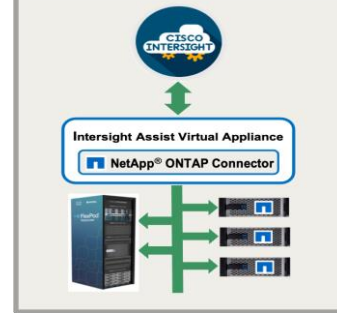
Extends Cisco Intersight infrastructure management to FlexPod® environments

- Intersight portal to unify and simplify user experience across data centers
 - Monitor FlexPod inventory
 - Initiate NetApp® ONTAP® storage workflow
- Integration with NetApp Active IQ® Unified Manager
- NetApp ONTAP Storage Connector
 - Maps Intersight API to Active IQ Unified Manager API



NetApp ONTAP Storage features from Cisco Intersight

Supports SAN(FC,ISCSI) and NAS(NFS) Protocols



Monitoring Dashboard

Storage Widgets

- Storage Array Version summary.
- Storage Array Model Details – Top 5 Arrays by Utilization.
- Top 5 Storage Volumes - Top Volumes by Utilization.

Storage Inventory

ONTAP Clusters

- ONTAP Clusters model, version, Storage Capacity, Summary of the Storage Objects.
- Physical Objects: Nodes, Disks, Ports.
- Logical Objects: SVMs, Volumes, LUNs, SAN Initiator groups, Export policies, Snapshots, Aggregates, License .

Orchestration

Reference Workflows

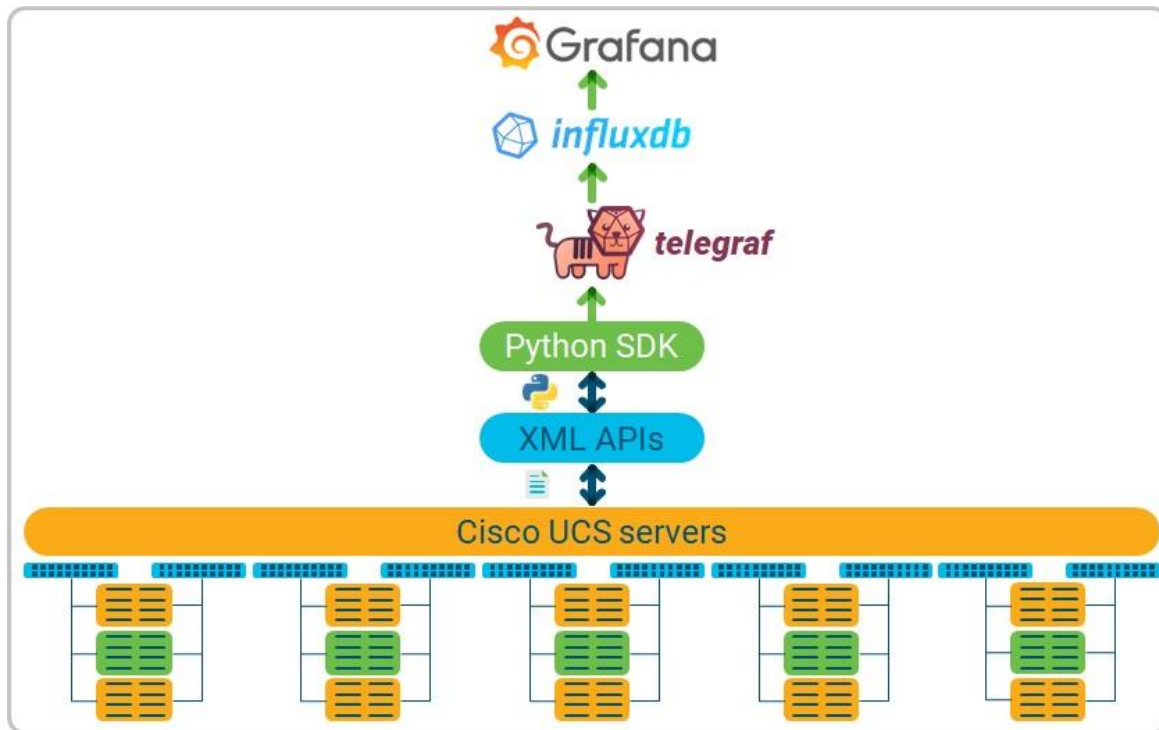
- New/Update/Remove Hypervisor Datastore
- New/Update/Remove Storage Host or initiator Group from NetApp Storage.
- New/Remove Export Policy from NetApp Storage.
- New Storage Virtual Machine.
- New Storage Logical Interfaces
- New Virtual Machine

Orchestration

Storage Tasks

- New Storage Virtual Machine, IP and FC Logical Interfaces, Volume, LUN, iGroup, Export Policy
- Expand Storage Volume, LUN
- Add Export Policy to Volume,
- Add Initiators to iGroup
- Map/Unmap iGroup to LUN
- Remove Volume, LUN, Export Policy, iGroup

Cisco UCS Monitoring UTM (UCS Traffic Monitoring)



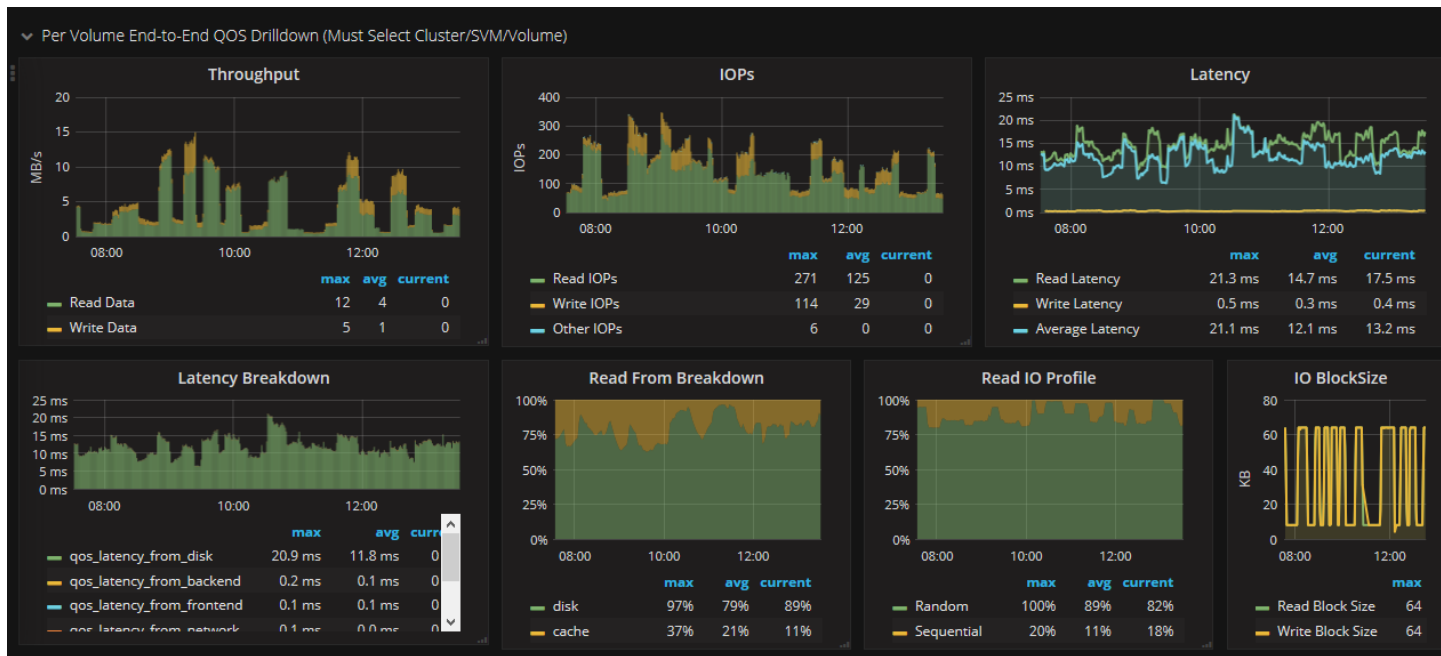
NetApp NaBox



NaBox is a packaged solution that provides NetApp metrics collection, archiving and graphing in the same virtual appliance. It is designed to be easy to deploy and operate through a web interface.

It is based on the following products :

[Harvest](#) (dashboards and data collection); Graphite (metrics database); Grafana (Web-UI for dashboards)



Thank You