

# Nutanix VMware to AHV Migration Workshop



# Agenda



Introduction



Nutanix AHV Overview



Migrating to AHV



Lab Walkthrough and Hands On



Call to Action and Wrap Up

# Presenters or Meeting Contacts

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# Nutanix AHV Overview



# One Platform for Hybrid Multicloud



## Nutanix Cloud Platform

Unified Storage Services

Database Services

Desktop Services

### Cloud Infrastructure

Disaster  
Recovery

Container Services

Data + Network  
Security

Advanced HCI

Virtual Networking

Scale-Out Storage

AHV Hypervisor

### Cloud Manager

App Lifecycle Management

Security Central

Cost Governance

Self Service Infrastructure

AI Operations

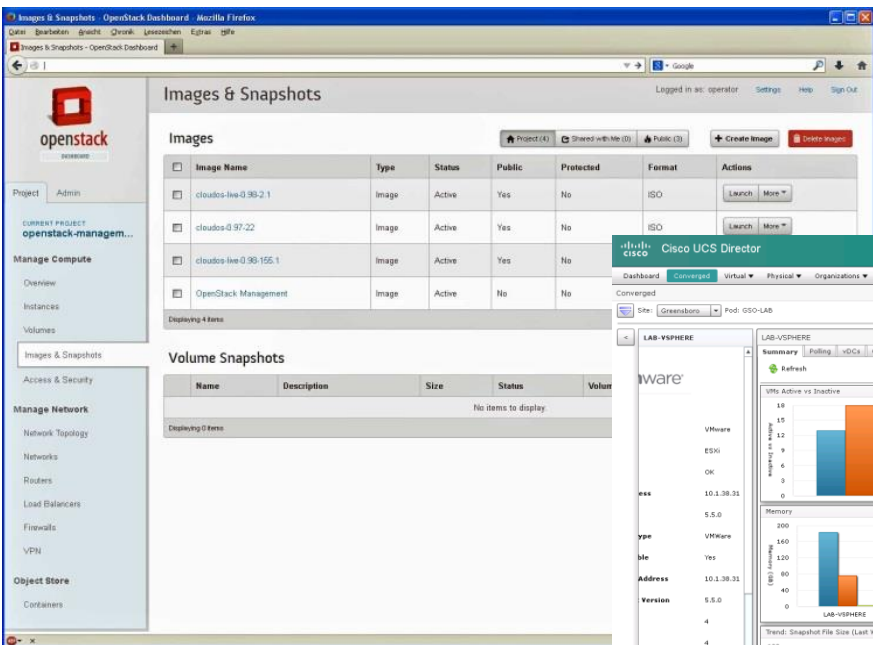
Unified Control Plane | Unified APIs | Security | Lifecycle Management



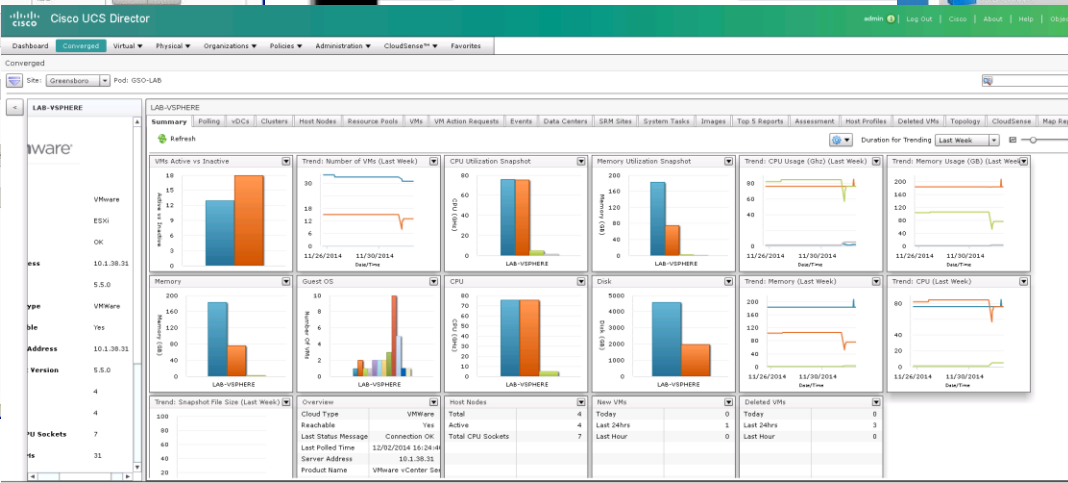
# Unified Management



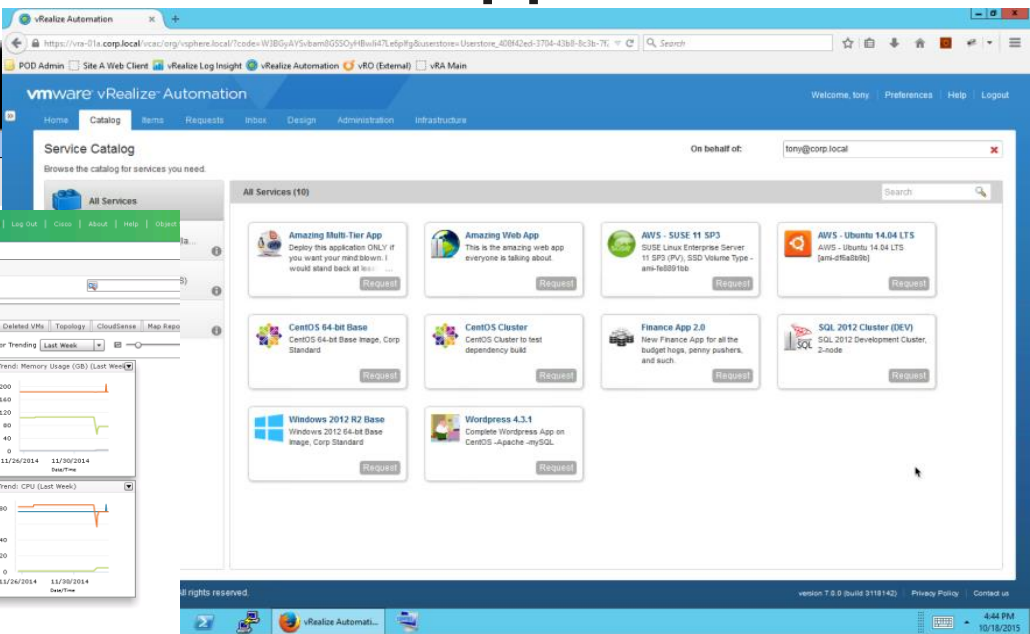
## Self Service



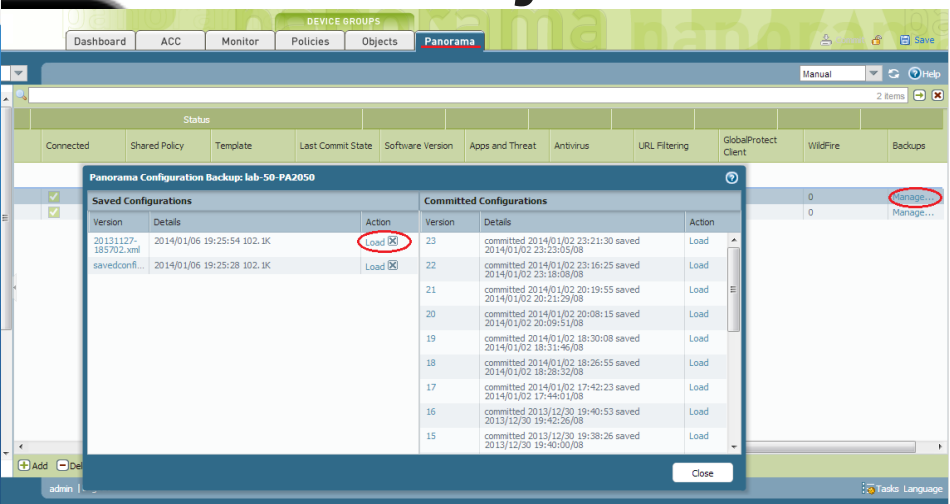
## Server



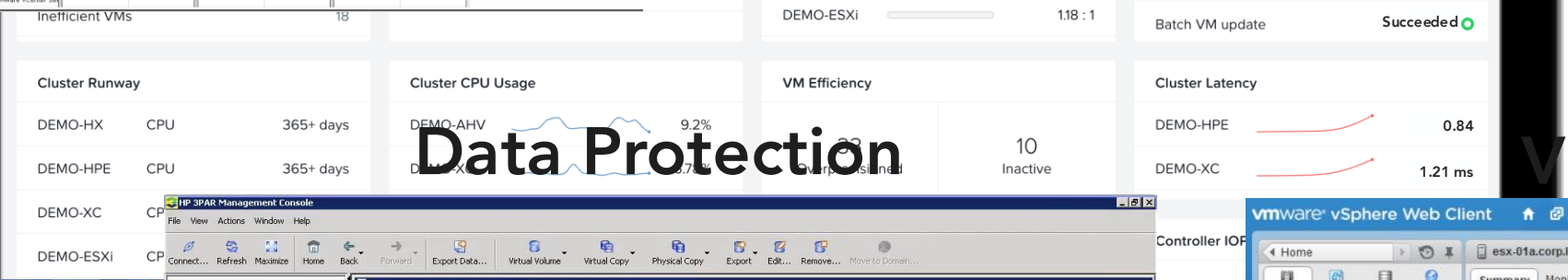
## Apps



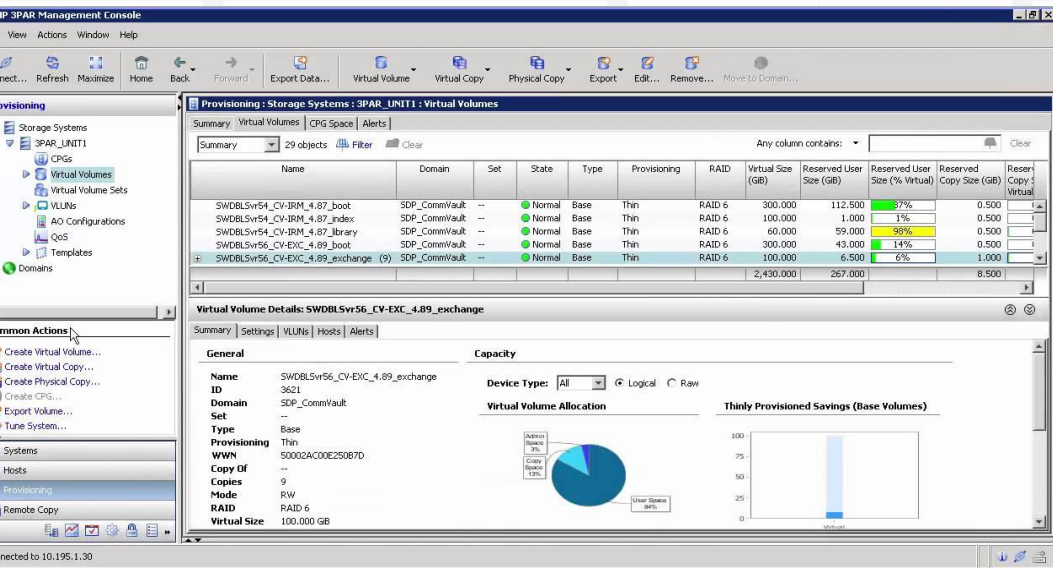
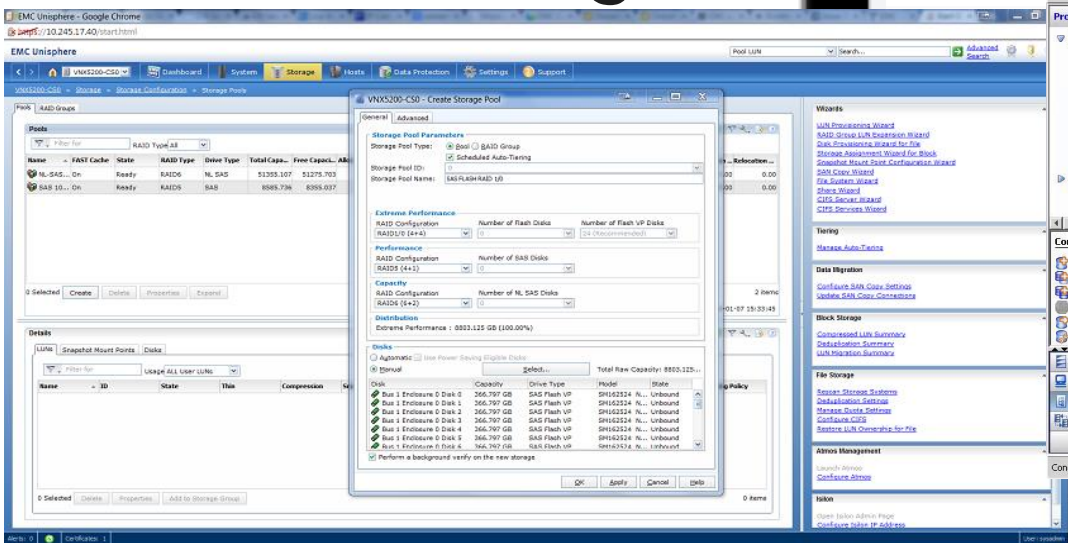
## Security



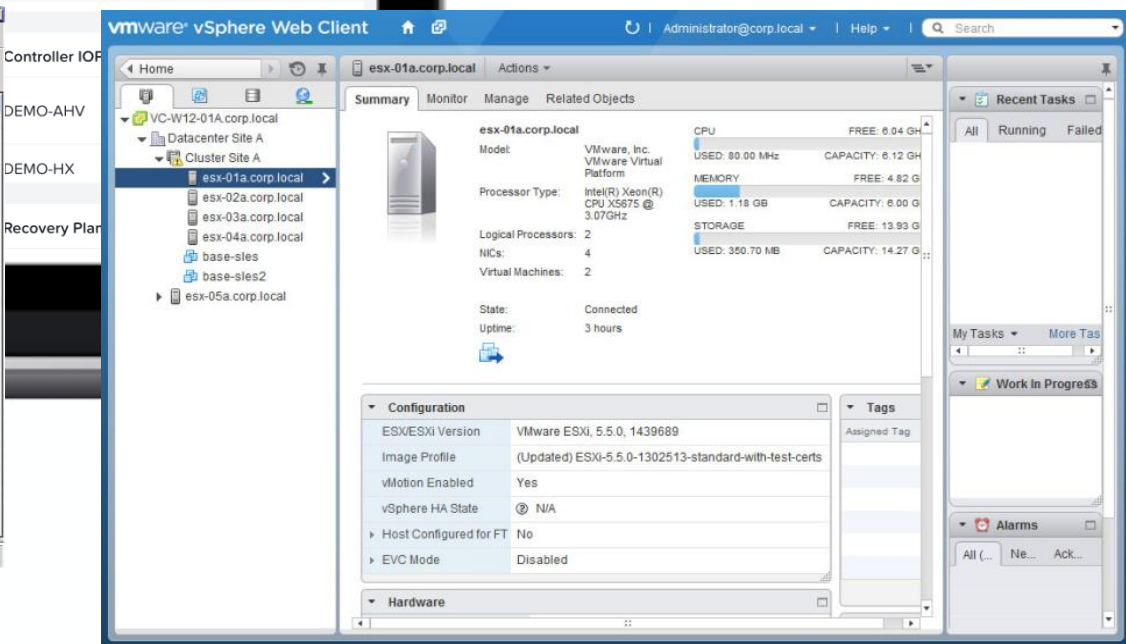
## Data Protection



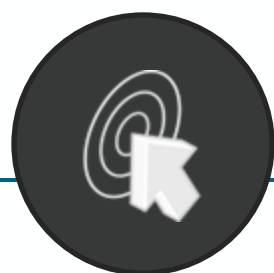
## Storage



## Virtualization



# Simplified Maintenance and Upgrades



Easy To Use



Intelligent



Scalable

Software → Firmware Full Stack Upgrades



AOS



AHV



Prism



Files



Objects



Calm



Foundation

Automatic Dependency Management



BIOS



BMC



HDD



SSD



Boot  
Drive



NIC



HBA



Expander

Unified Upgrade Process

NUTANIX

Hewlett Packard  
Enterprise

DELL EMC

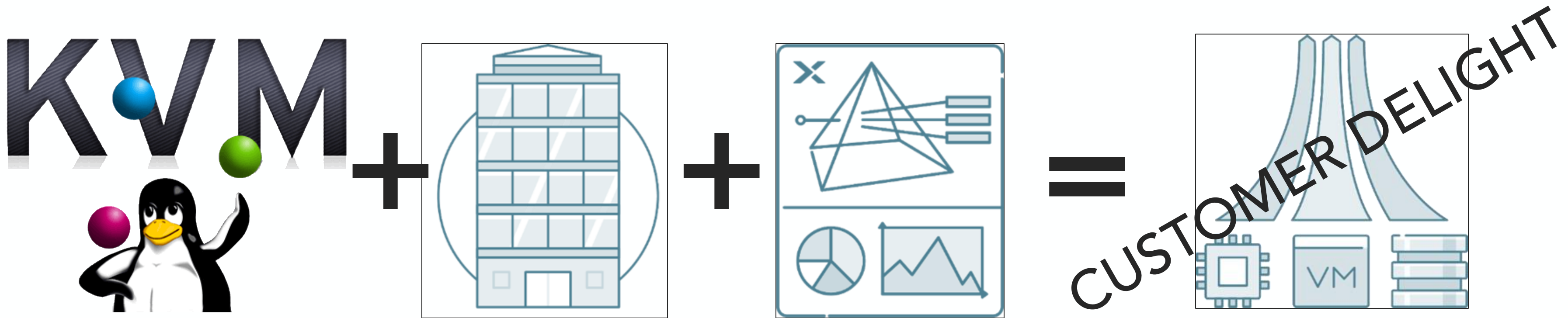
Lenovo

inspur

FUJITSU

intel

# What is AHV



- Competent Hypervisor
- Cumbersome management
- Missing enterprise features
- Manual monitoring
- Limited ecosystem

**Enterprise  
Features**

**One Click  
Management**

- Performance Tuned for HCI
- Single pane management
- Enterprise ready (HA, DRS, etc)
- Full stack insights and forecasting
- Native virtual networking
- Expansive ecosystem





## Platform Capabilities



VMC
Horizon
Data Services Manager
Aria Migration / HCX
Aria Cost by CloudHealth
Aria Automation (vRA)
Aria Operations (vROPS)
Aria Insights
vSAN File Services
NSX
Site Recovery Manager
Tanzu Kubernetes Grid
vSAN
ESXi

Hybrid Cloud
End User Computing / Virtual Desktops
Database Services
App Mobility / Migration
Cost / Governance
Application Automation / Orchestration / Self Service
Advanced Intelligent Operations
Data Analytics
Storage Services
Microsegmentation / App Firewalling
Network Overlay
Advanced Replication and DR
Kubernetes
Storage Operating System
Hypervisor

Nutanix Clusters (NC2)
Horizon/Citrix
Nutanix Database Srvs (NDB)
Move
Nutanix Cloud Management (NCM)
Nutanix Unified Storage (NUS)
Nutanix Cloud Infrastructure (NCI)

# Broad Ecosystem

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## Solutions Validated

Data Protection  
Security  
Networking  
Hybrid Cloud  
Applications Support  
VDI  
Management & Ops  
UC  
Monitoring












# Complete Data Center



Heterogenous Workloads	Customer Choice Drives Purpose-Fit Datacenters		
	HCI Platforms	Hypervisors	Kubernetes
	 NX	 AHV	 NKE
	       ... and more	 	   

# Resiliency



Reliable, Auto-Healing Operations for Datacenter Uptime			
Heterogenous Workloads	Auto-Recovery	Disaster Recovery	Backup
Centralized Management	High Availability <ul style="list-style-type: none"><li>On by default</li><li>HA Guarantee</li></ul>	Synchronous / Metro <ul style="list-style-type: none"><li>0 RPO, 5ms latency</li><li>Recovery plan, Witness</li></ul>	  
Resource Management	VM Snapshots <ul style="list-style-type: none"><li>Performant</li><li>Reliable</li></ul>	NearSync <ul style="list-style-type: none"><li>Up to 20s RPO</li><li>LWS-based</li></ul>	 
Business Continuity	Self-Healing <ul style="list-style-type: none"><li>Configuration drift auto-remediation</li><li>Saltstack</li></ul>	Asynchronous <ul style="list-style-type: none"><li>&gt;= 60m RPO</li></ul>	  
Hyperconverged Choice			 ... and more

# Resource Controls



Heterogenous Workloads	Automatic and Customizable Resource Operations		
Centralized Management	Control Plane		Security
	ADS Scheduling <ul style="list-style-type: none"><li>• VM placement</li><li>• Hotspot remediation</li></ul>	Networking <ul style="list-style-type: none"><li>• Virtual Switches, VPC</li><li>• Flexible VLANs</li></ul>	Compliance <ul style="list-style-type: none"><li>• Auth, RBAC, Auditing</li><li>• CC, DoD APL, and more</li></ul>
Resource Management	Affinity <ul style="list-style-type: none"><li>• VM:Host, Anti-Affinity</li><li>• Policy-based</li></ul>	Mobility	Controls <ul style="list-style-type: none"><li>• Cluster lockdown</li><li>• Strong passwords</li></ul>
Business Continuity	Memory Overcommit <ul style="list-style-type: none"><li>• Opt-in only</li><li>• Per-VM control</li></ul>		Encryption <ul style="list-style-type: none"><li>• Hardware, Software</li><li>• Native key manager</li></ul>
Hyperconverged Choice	CPU Oversubscription <ul style="list-style-type: none"><li>• Automatic</li><li>• NUMA control</li></ul>	vGPU and GPU <ul style="list-style-type: none"><li>• NVIDIA</li><li>• Live migration</li></ul>	Upgrades & Patching <ul style="list-style-type: none"><li>• Integrated LCM</li><li>• CVE remediation</li></ul>



# Simplified Management



**Heterogenous Workloads**

**Centralized Management**

**Resource Management**

**Business Continuity**

**Hyperconverged Choice**

## Included Multi-Cluster Management Management Plane

- Prism Central
- Full controls
  - Multi-Hypervisor

- RBAC
- Granular controls
  - Custom profiles

- User Auditing
- Auto-documented
  - Rsyslog support

- Hardware Management
- Cluster management
  - Observability

- Activity Monitoring
- Alerts, Events, Tasks
  - Live status

- Network Controls
- Connectivity
  - VPCs, Virtual switches

... and more

## Image Library

- Core Image Assets
- Hard disk images
  - ISO files
- AHV Templates
- Snapshot-based
  - Editable generations
- OVA
- Import ESXi OVAs
  - Export AHV VMs

# All Workloads



## Heterogenous Workloads

## Support for Diverse, Heterogenous Datacenter Workloads

Centralized Management
Resource Management
Business Continuity
Hyperconverged Choice

### Workload Support

- Virtual Machines
- Feature-rich
  - Policies, Controls

- Containers
- Kubernetes, Linux
  - Fully-integrated

### Workload Diversity

- Databases
- SAP HANA
  - Relational, NOSQL
- Virtual Desktop
- Citrix
  - Frame
- ... and more

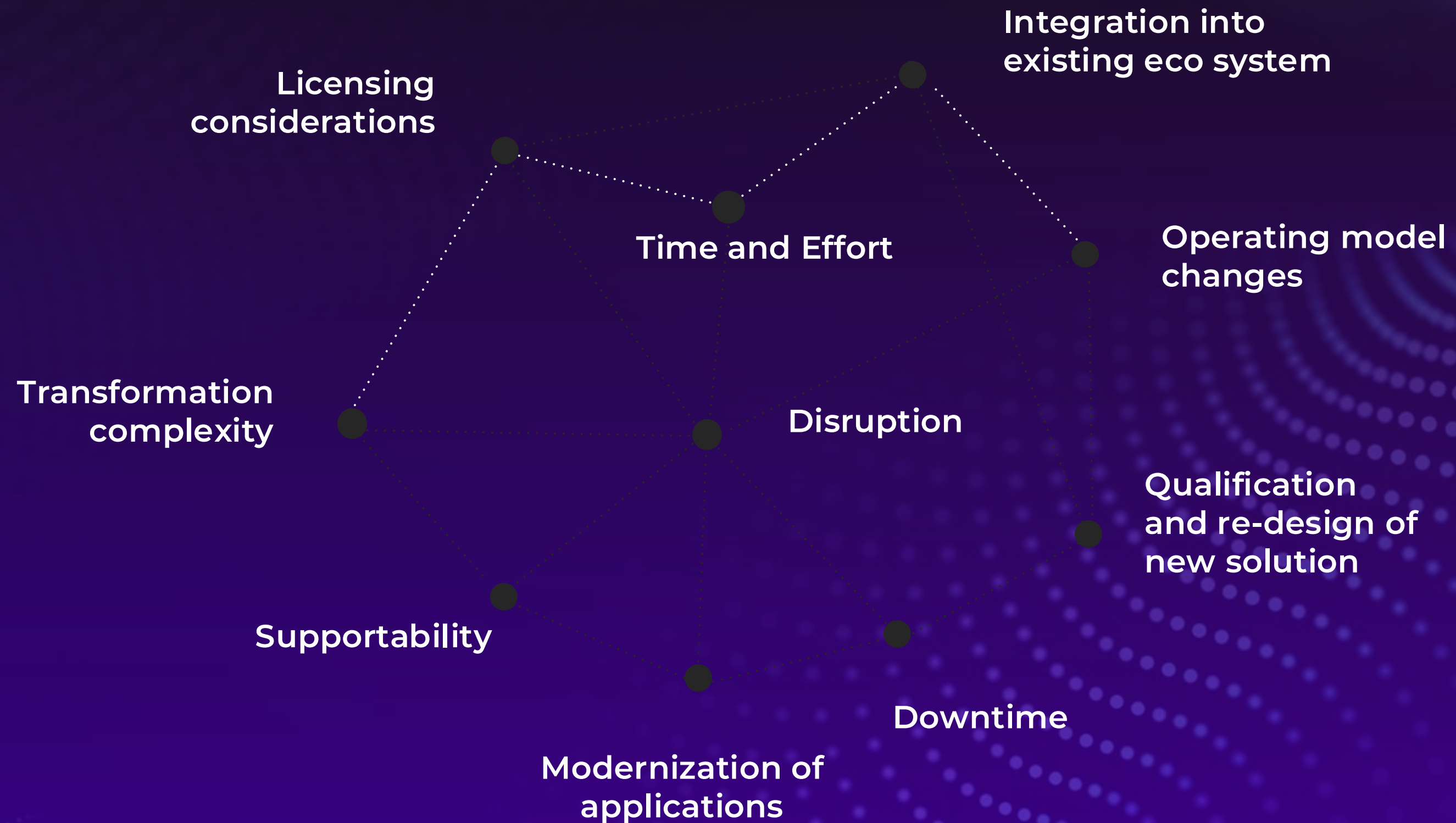
### OS Support

-  Windows Server 2022
-  Windows Server 2016
-  Windows Server 2012
-  Windows Server 2008
-  Windows 10
-  Red Hat Enterprise Linux
-  CentOS
-  Rocky Linux™
-  AlmaLinux
-  ubuntu
- ... and more

# Migrating to AHV



# Migrating Can Be Complex





# Migration Framework

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## Assessment, Discovery, Strategy

- Fully assess current environment, discover dependencies
- Integrate assessment findings into the migration strategy
- Analyze current processes and business objectives
- Document datapoints, requirements, and the migration strategy



## Planning

- Comprehensive planning for all migration patterns
- Align with business and application owners on the migration plan, including cutover and downtime windows
- Create end-to-end migration runbooks, including order, steps, rollback plans, and final UAT and sign-off



## Execution

- Deploy migration tooling and submit needed change requests
- Validate that pre-requisites are met
- Execute the migration runbooks
- Continuous reporting throughout the Program
- Stakeholder sign-off



## Education and Enablement

- Training and certification planning and execution
- Custom workshops and bootcamps to address skillset gaps
- Identification of processes to be updated
- Continuous knowledge transfer to optimize new processes



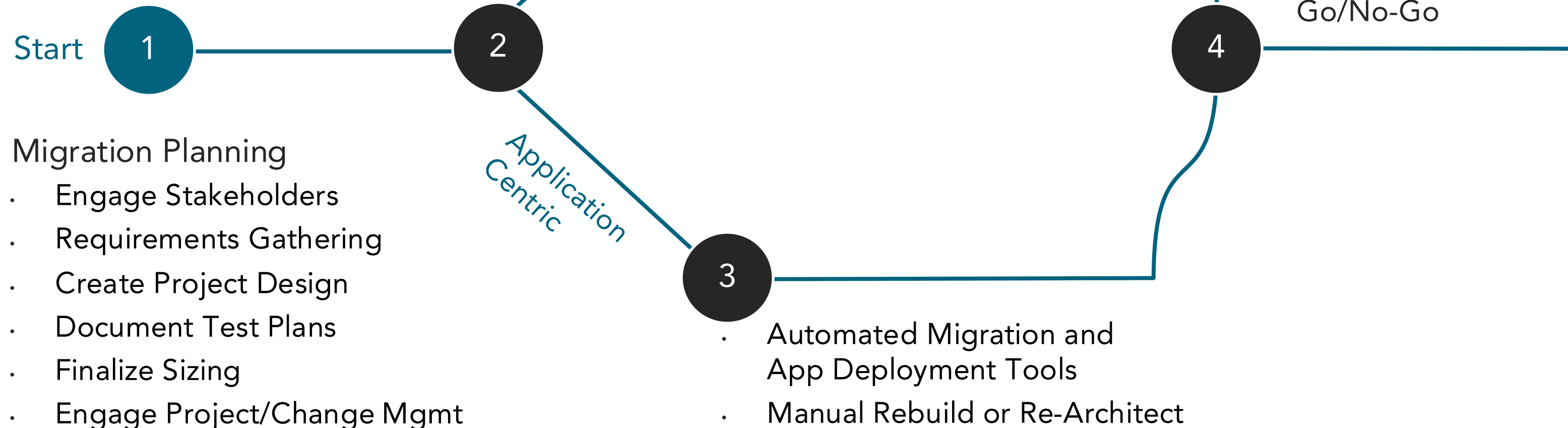
# Common Migration Methodology



## Inventory Tools

- Nutanix Collector
- RVTools

Legacy  
Production



# Move: Key Features

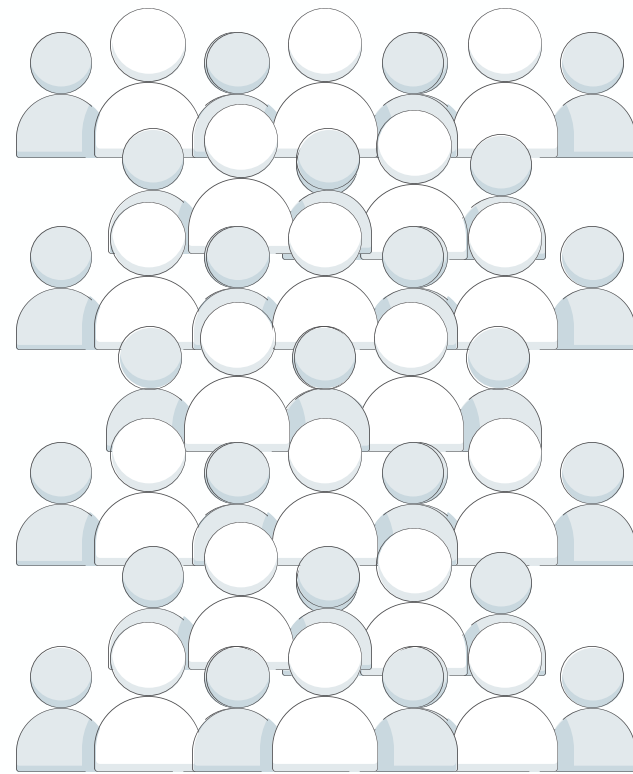
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- Cost free for Nutanix customers
- Supported by Nutanix SREs
- Deploy from the Prism Central Marketplace or download the appliance
- Intuitive, easy to learn GUI or API access
- Wide range of supported OSs
- vSphere, Hyper-V, AWS & Azure support
- Agentless\*
- Near zero down time
- Retain or adapt network configs
- Replication Bandwidth Throttling
- Auto AHV IO driver insertion
- NFS/CIFS migration to Nutanix Files™

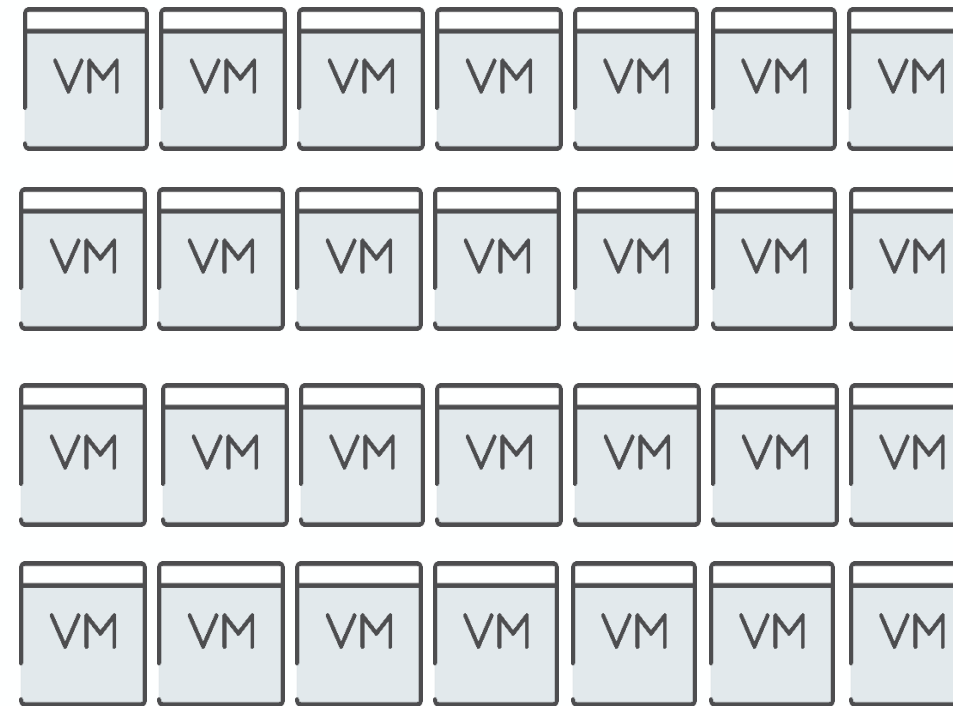
\*Agentless for guest VMs. A host agent is required for Hyper-V Migrations

# Move Customer Adoption

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1,000s of Customers



500,000+ VM Migrations

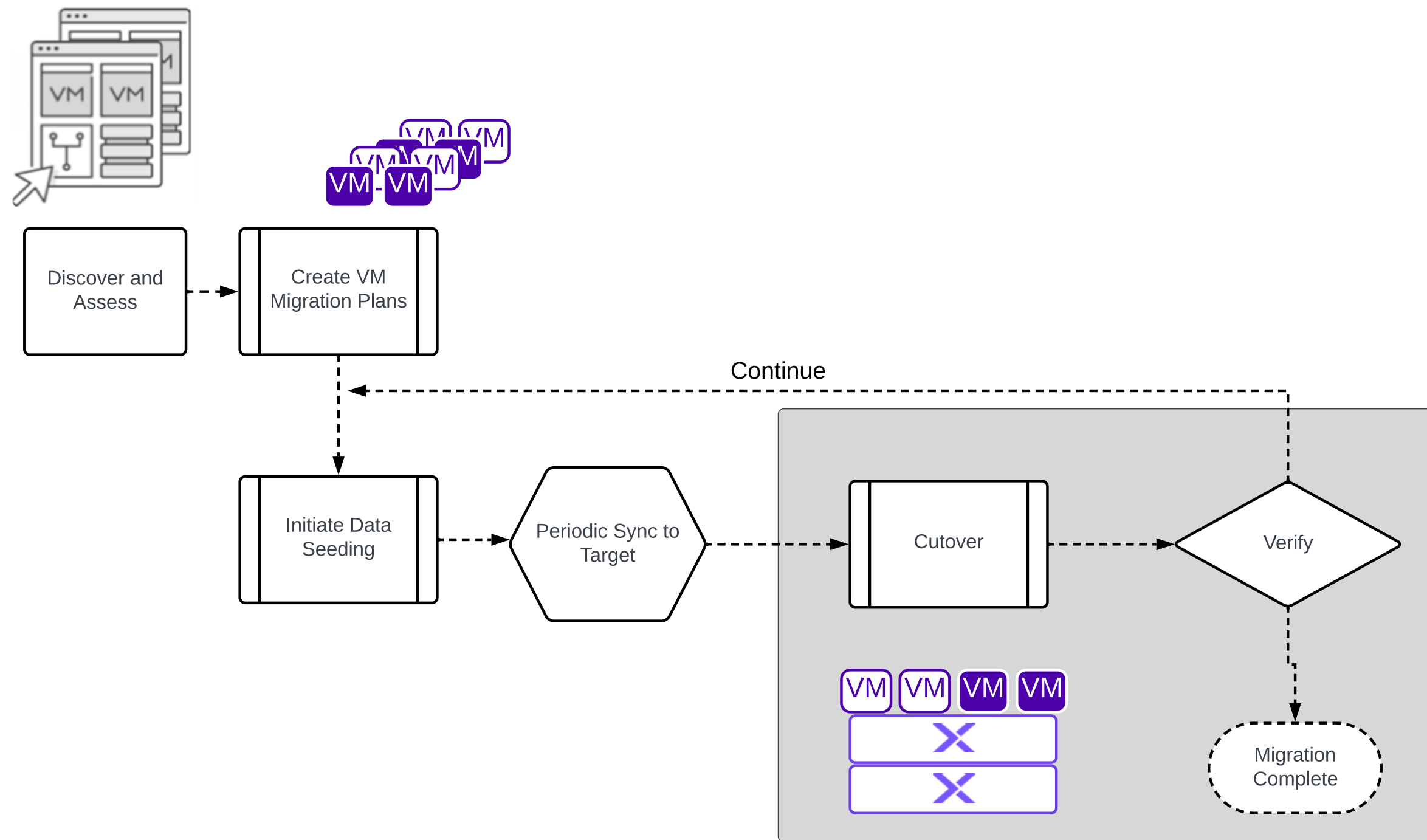


Nutanix Cloud Platform  
Acropolis Hypervisor

7+ years since launch

# VM Migration Workflow

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# Move Capabilities

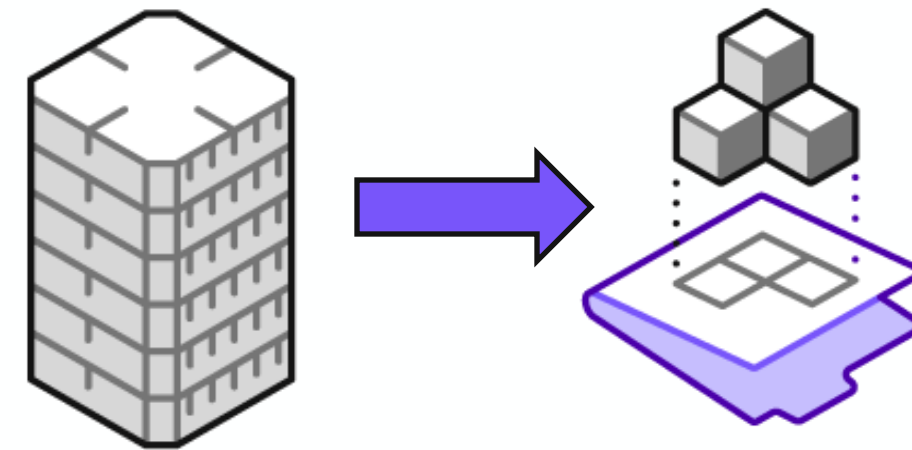


Target Source	AHV on- prem	ESXi on Nutanix	AWS EC2	Azure Cloud	NC2 on Azure	NC2 on AWS	Nutanix Files <sup>TM</sup> 4.4
ESXi	▶▶	▶▶	-	-	▶▶	▶▶	-
Hyper-V	▶▶	▶▶	-	-	-	▶▶	-
AWS EC2	▶▶	▶▶	-	-	-	▶▶	-
Azure Cloud	▶▶	▶▶	-	-	▶▶	-	-
AHV	▶▶	-	▶▶	▶▶	▶▶	▶▶	-
NC2 on Azure	▶▶	-	-	-	▶▶	-	-
NC2 on AWS	▶▶	-	-	-	-	-	-
VMC on AWS	▶▶	-	-	-	-	▶▶	-
File Shares NFS v3 / SMB v2+	-	-	-	-	-	-	▶▶



# Move Support for Native File Migration

- SMB (CIFS)2.0+ and NFS 3 migration
- Targets Nutanix Files only
- File server (FSVM) pulls data from source
  - No proxy machines needed  
= great performance
- Maintains ACLs
- CLI, API or Nutanix Move Appliance



The screenshot displays the Nutanix Move console interface. At the top, there's a navigation bar with 'Move', 'VM', and 'Files' tabs, and a 'New Update Available' notification. Below this, the 'Migration Plans' tab is selected. The main area shows a summary of migration status: 1 In Progress Share, 0 Failed Shares, 0 Paused Shares, 0 Ready to Cutover Shares, and 0 Completed Shares. A table below lists the migration plans.

<input type="checkbox"/>	Migration Plan Name	Source and Target Server	No. of Shares	Migrated Data Size ?	Elapsed Time	Status
<input type="checkbox"/>	Files Plan	Other File Server to Nutanix Files	1	Not Available	3m	In Progress

# How long does a migration take? It depends!

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Total migration size	Number of VMs	Size for each vDisk	Number of vDisks	Network bandwidth	Migration time taken		Throughput
					Data seeding	Cutover	
3.5 TB	1	3.5 TB	1	10 G	285 min	< 5 min	193 MBps
1 TB	1	1 TB	1	10 G	98 min	< 5 min	180 MBps
1 TB	1	256 GB	4	10 G	80 min	< 5 min	218 MBps
280 GB	8	35 GB	8	10 G	20 min	< 5 min	240 MBps

\*All figures are estimations. Your own network, data change rates and other factors will impact your migrations

It is strongly recommended to engage your local services / delivery team to help scope migration effort and in some cases run a migration workshop.