eGroup | ENABLING TECHNOLOGIES
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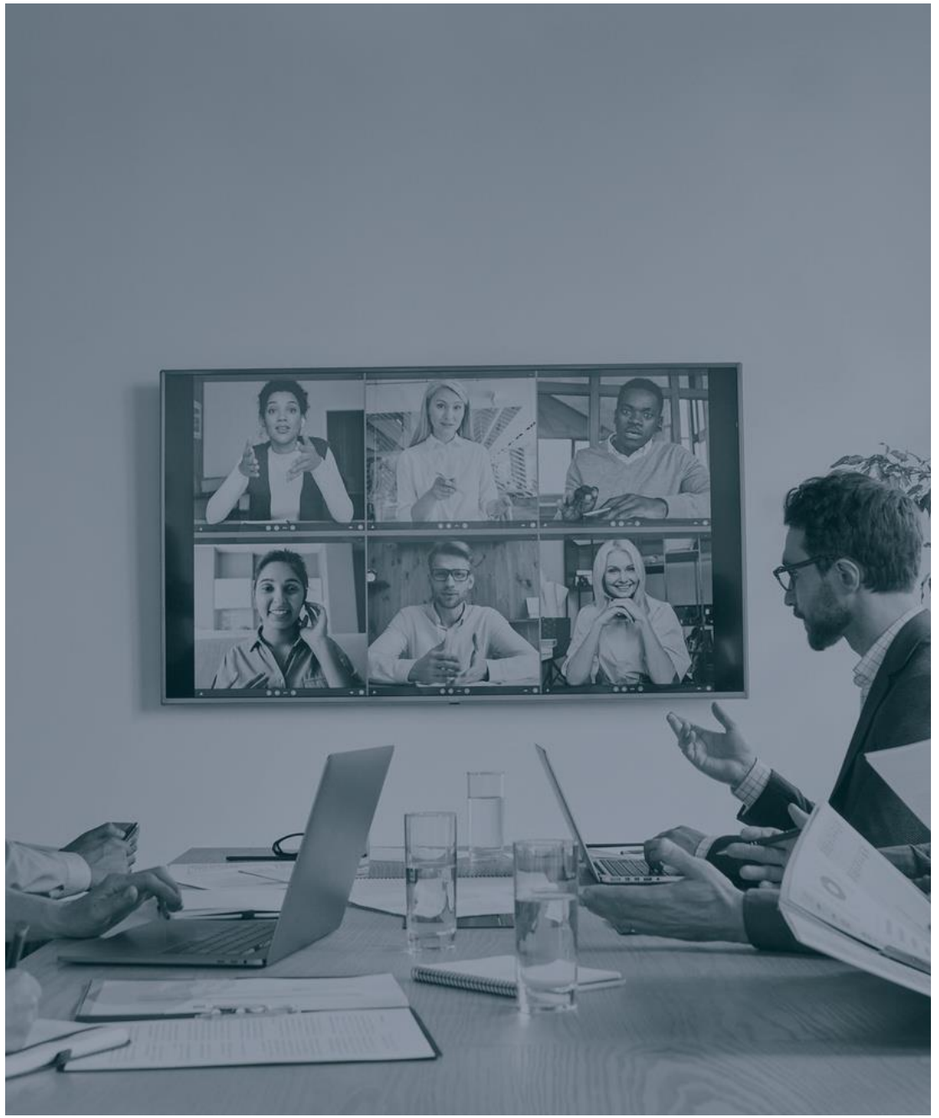
Streamline and Transform Your IT Operations with Automation

Nutanix Workshop Series – Part Three

March 5, 2025



Meet Your Presenter

Mike Dent

Field CTO – Hybrid Data Center

LinkedIn

Overview

Goal

Learn how Nutanix solutions can simplify and automate IT operations.

Agenda

01 Introduction and Forecasting

02 Planning

03 Monitoring and Optimization

04 Operation and Resource Operation

One Platform for Hybrid Multi-Cloud

Nutanix Cloud Platform

Unified Storage Services

Database Services

Desktop Services

Cloud Infrastructure

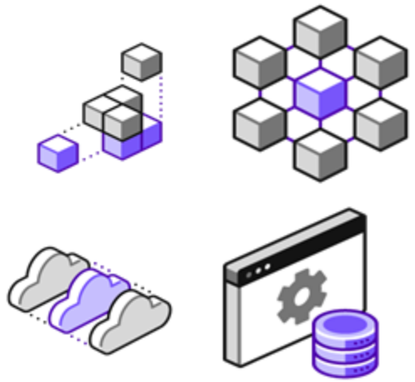
- Disaster Recovery
- Container Services
- Data + Network Security
- Advanced HCI
- Virtual Networking
- Scale-Out Storage
- AHV Hypervisor

Cloud Manager

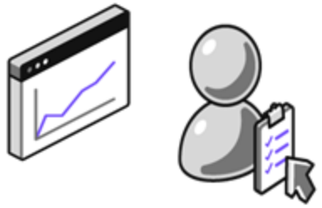
- App Lifecycle Mgmt
- Security Central
- Cost Governance
- Self Service Infrastructure
- AI Operations

Unified Control Plane | Unified APIs | Security | Lifecycle Management

Customers are Facing Challenges



More moving parts



Dynamic demand

Know what to do

Make it simple

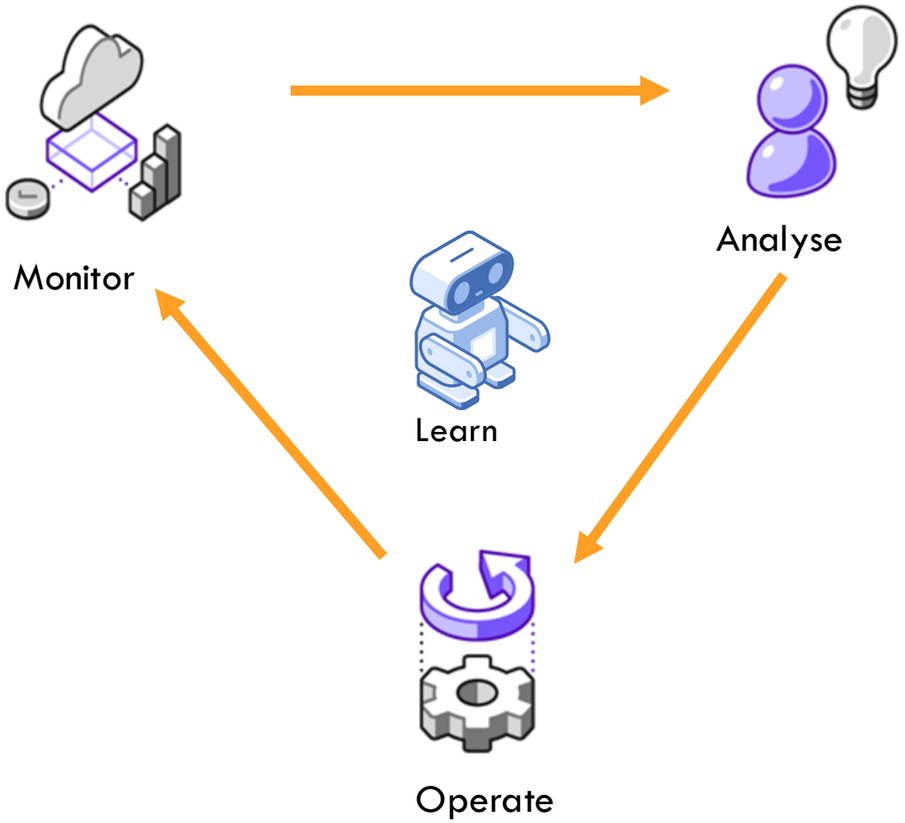
Noise

Silos

Over-complex

Manual ops

Unique Approach in PRISM



Broad observability

Actionable signals

Automation with ease

Seamless operations experience

Use Case Examples

Efficient use of resources

- Detect waste with machine learning.
- Automate optimization with proper approval.
- Admin can rapidly build and tailor the automation to IT policies.

Proactive performance remediation

- Detect anomalies based on performance behavior.
- Triage with full-stack visibility.
- Prevent problems from causing a bigger impact.

Cost optimization

- Report cost visibility based on comprehensive TCO.
- Deliver chargeback reports by cost centers.
- Control spending and budget with policies.

Cloud-like capacity expansion

- Forecast capacity shortage with machine learning.
- Automatically Deliver planning reports to management.
- Reduce the capacity waste by over buying.

Key Capabilities

Observability

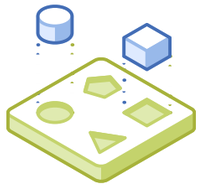
Full-stack view

Operations Automation

Higher Productivity

Cost Management

Reduce Waste



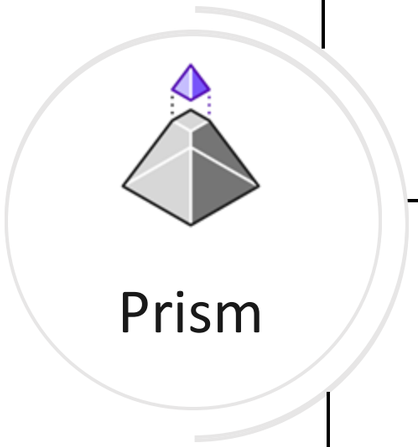
Capacity Optimization

Higher ROI

Proactive Remediation

Healthy Services

Benefits That PRISM Can Deliver



Just-in-Time Forecast & Planning

Accurate alignment with business growth

Intelligent Monitoring and Optimization

AI powered Monitoring and Optimization

Discovery and App Insights

Operational and Resources Automation

Higher service quality via codeless Automation

Cost governance with chargeback and budgeting

Capacity Forecast and Planning

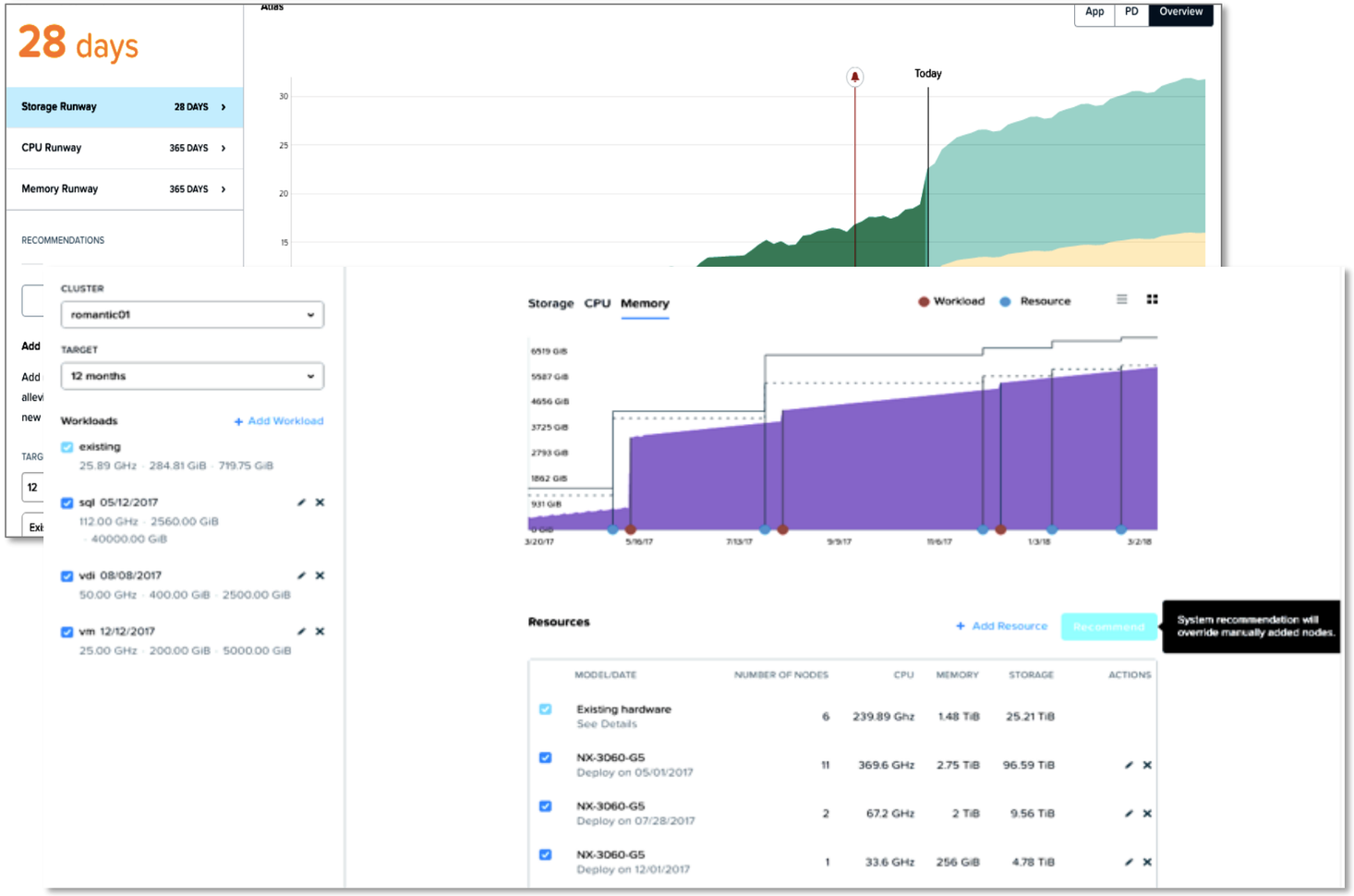
Forecast shortage, detect inefficient resource use, and simplify planning. Prism, powered by machine learning, keeps infrastructure use efficient.

Features Covered:

- Capacity forecast
- Just-in-time planning
- Reporting

How to Plan and do JIT Forecasting

Keep resources used efficiently

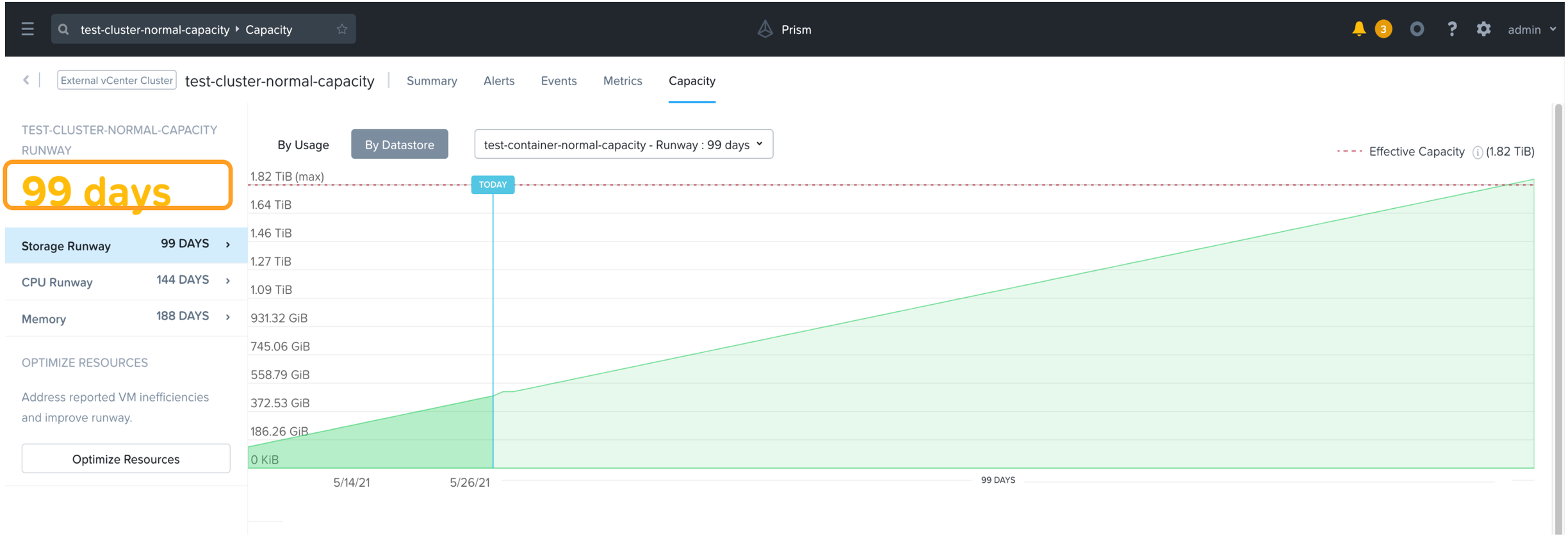


What is it?

- Detailed capacity forecast
- Scenario-based analysis
- One-click recommendation for just-in-time expansion
- Ready-to-present PDF report
- Powered by X-FIT machine learning engine

Benefits:

- Early warning for capacity shortage
- Eliminates guesswork and waste
- Enables pay as you grow capacity expansion to match the business demand



Background

- With PC 2021.1, we supported intelligent monitoring and optimization as well as codeless task automation for vCenter VM/Host/Cluster
- With PC 2021.5, Capacity calculations algorithms (X-FIT) for non-Nutanix vCenter entities
  - User experience for Nutanix and non-Nutanix entities is now same for capacity planning
  - New alerts for vCenter CPU/memory/storage capacity

Minimize Service Interruption

Reactive

Chasing the problem
only after it impacts business

Distracted

The alert storm
buries the real problem

Capacity Planning

Guesswork

Leads to an expensive surprise, inhibiting the business growth

Waste

Introduces hidden costs, reducing the business profitability

Reporting

Benefit

- Get reports directly to email inbox without needing to access Prism

Advantages

- Summarize operations signals and insights without needing other tools

Key Capabilities

- Out-of-the-box reports
- 23 widgets available
- PDF and CSV outputs
- Schedule reports

02 Forecasting & RightSizing

Benefits That PRISM Can Deliver

Just-in-Time Forecast & Planning

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AI powered Monitoring and Optimization

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Cost governance with chargeback and budgeting

Monitoring and Optimization

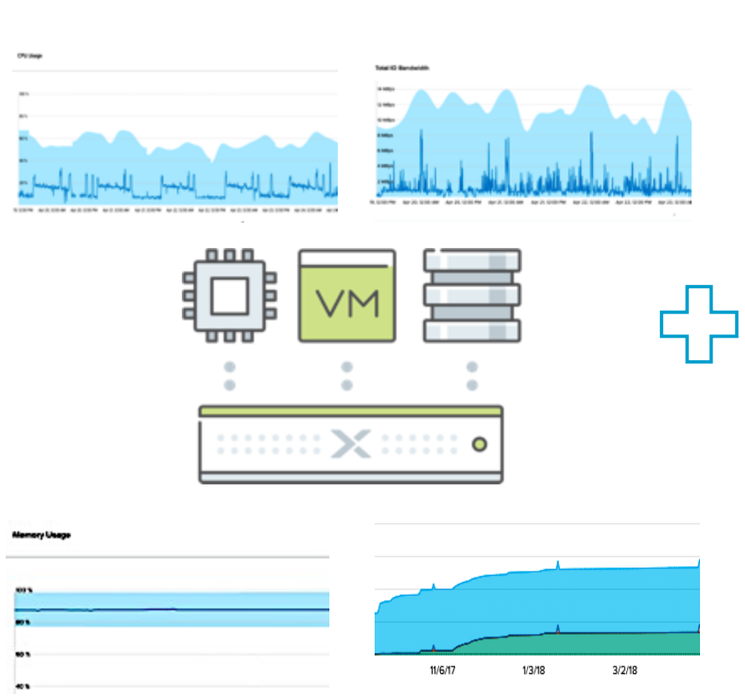
Powered by purpose-built machine learning, Prism learns system performance behavior, proactively detects issues before they cause damage, and helps IT admins quickly correlate data and isolate problems.

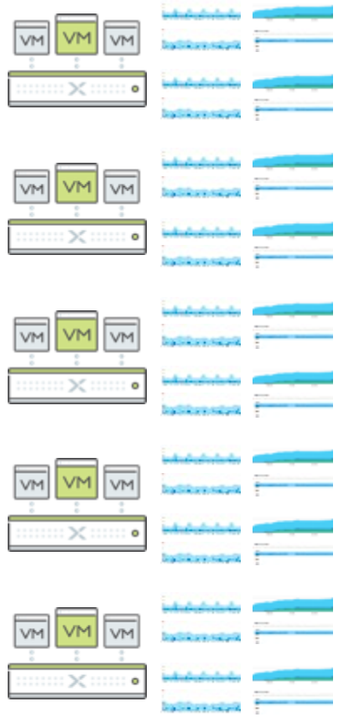
Features Covered:

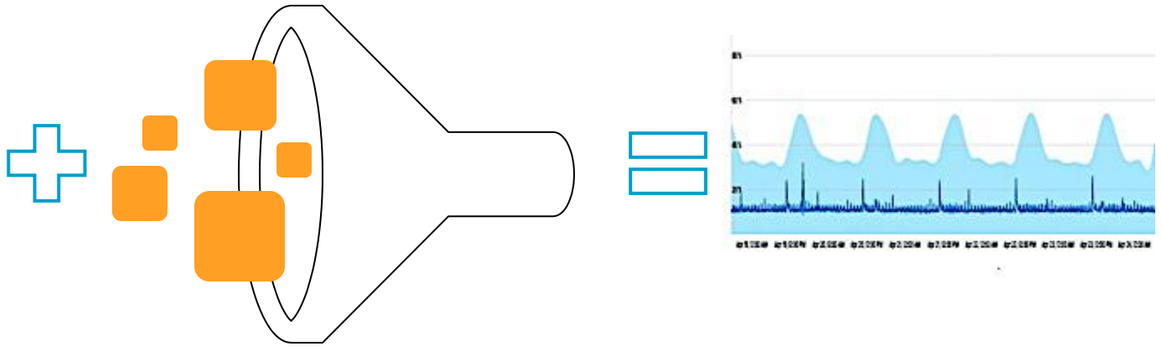
- Intelligent Monitoring to reduce Alert storm & VM right-sizing
- Advanced troubleshooting with sessions
- Discovery & App Insights
- Monitor non-Nutanix environment

X-FIT: A Purposed Built Machine Learning Engine

Optimized Learning	Scale-proof Intelligence	Self-learning for the Best Fit	Accurate Behavior



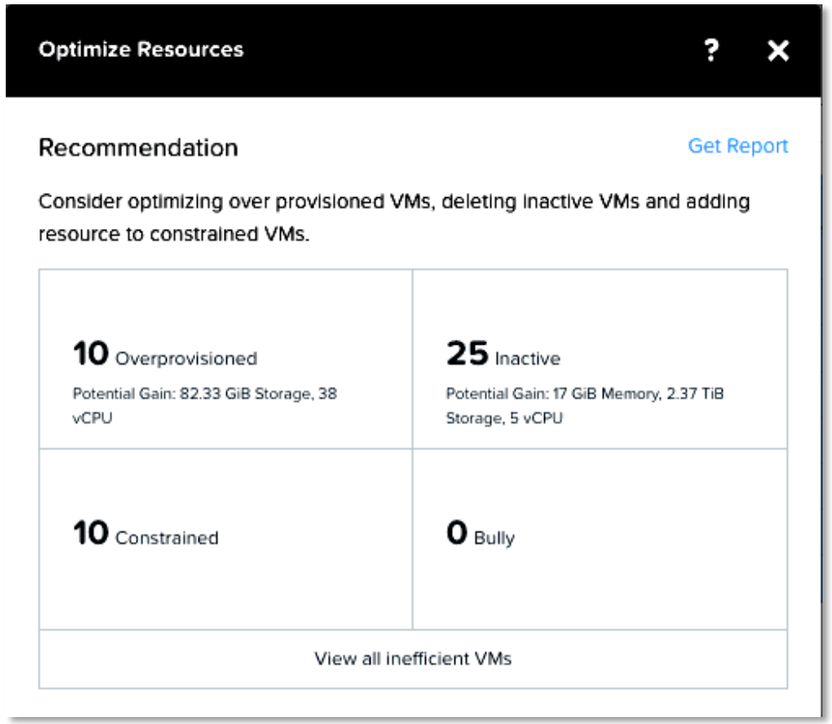


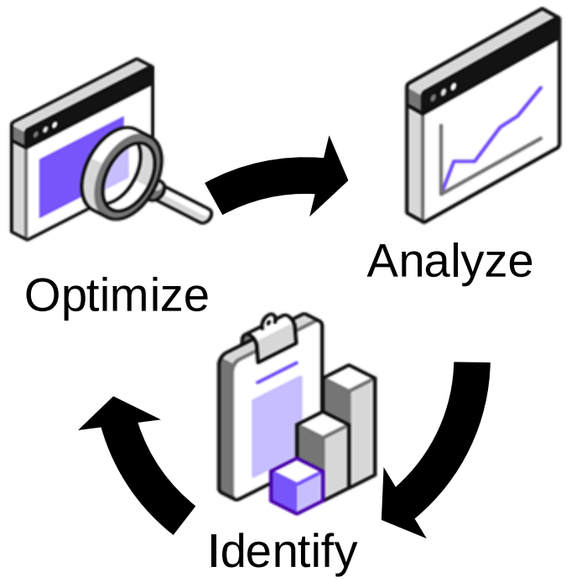


How to Leverage Automated Optimization

Minimize Spend with **Anomaly Detection**

Optimization backed by ML





What is it?

- Automatic learning of the performance behavior of VMs
- Detection of the anomaly when a VM deviates from its normal performance behavior.
- Powered by X-FIT VM behavior learning engine

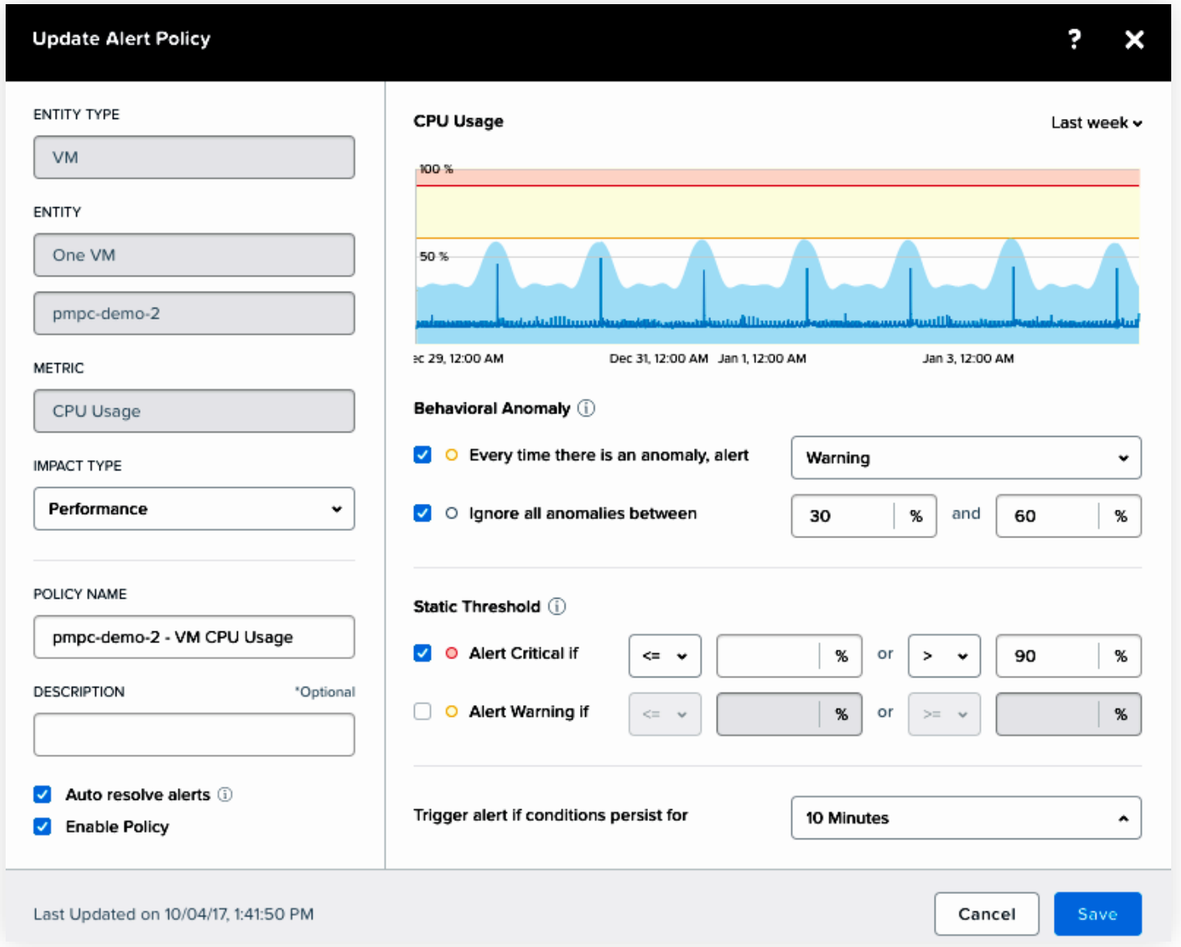
Benefits:

- Provide an early warning of the performance issue in VMs
- Lower admin overhead – remove the alert storm and let admin focus on what's important

Pro Tips

Minimize the service interruption

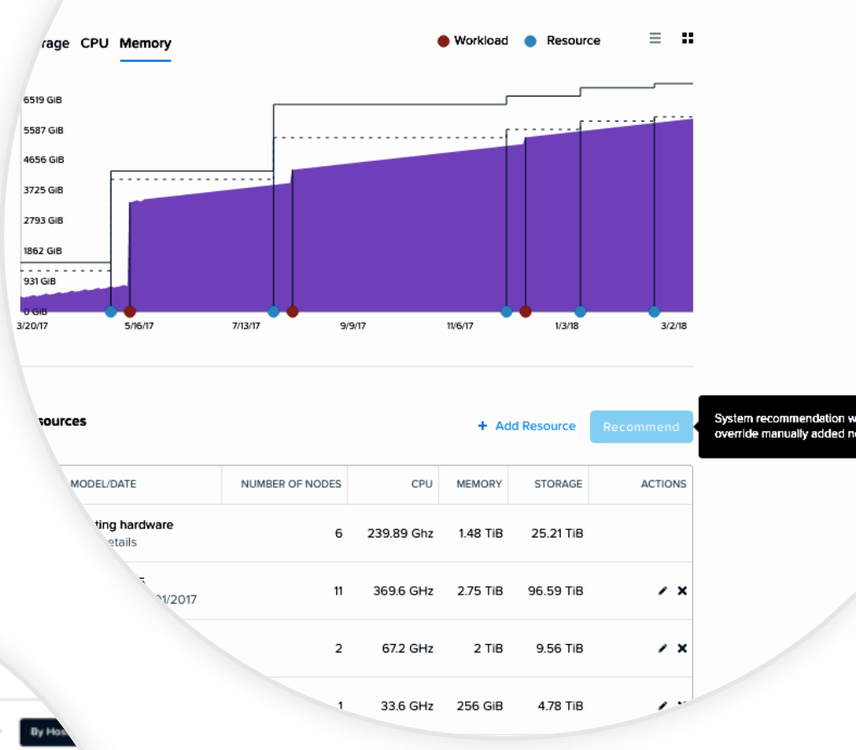
1. Build your early warning awareness
2. Closely monitor the anomalies of your critical clusters or VMs
3. Properly set up the alert zones to reduce the noise
   - Worst case zone
   - Quiet zone
   - Anomaly detection zone

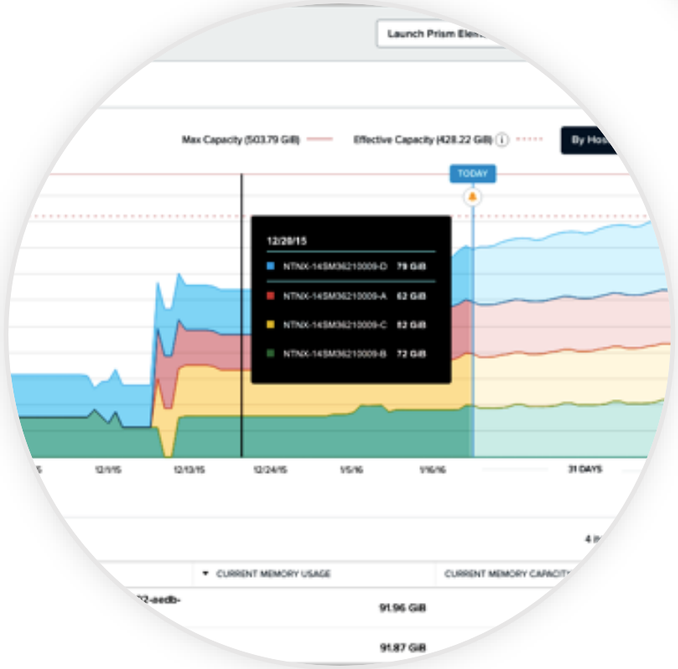


Pro Tips

Improve efficiency of the resource utilization

1. Pay attention to the runway alerts
2. Share VM right sizing report to your application teams
3. Do just-in-time forecast planning with your management and application teams





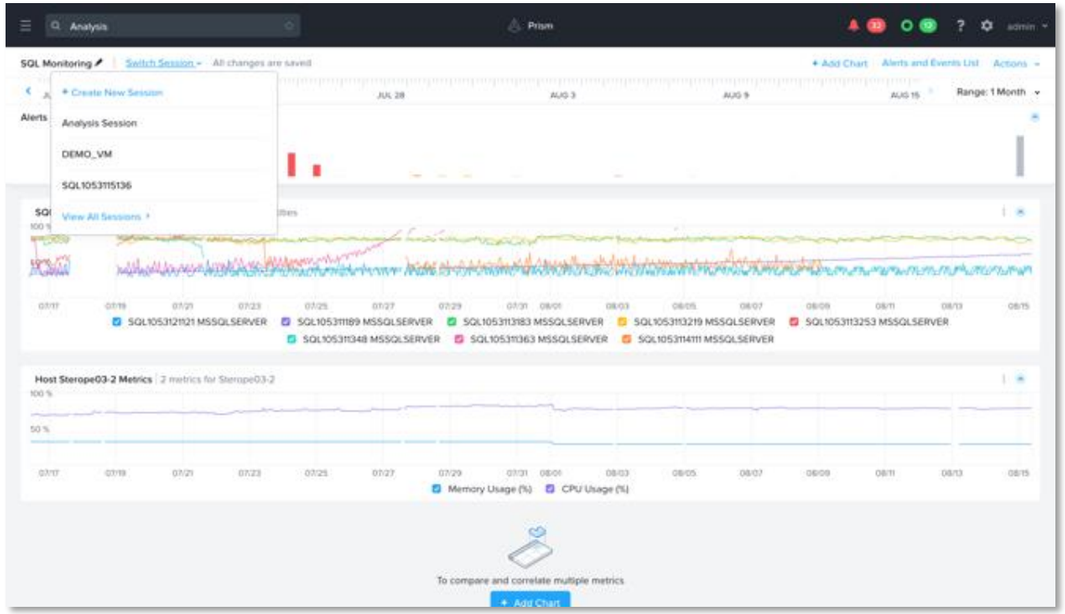
Advanced Troubleshooting

Benefits

- Speed up troubleshooting with easy metric correlation and comparison

Advantages

- Customize contextual sessions for efficient troubleshooting



Key capabilities

- Adjustable time range up to a year
- Add multiple charts at once
- Export of chart data to CSV/JSON
- Correlate data with alert timeline

Observability & Insights for Apps

Gather data from many sources, process it into a meaningful context, discover dependencies, and provide insights. Observability breaks the data silos and provides a full-stack view to help IT admins understand their system better.

Features covered:

- Discovery
- App Insights: SQL Server monitoring
- VM monitoring for non-Nutanix environment

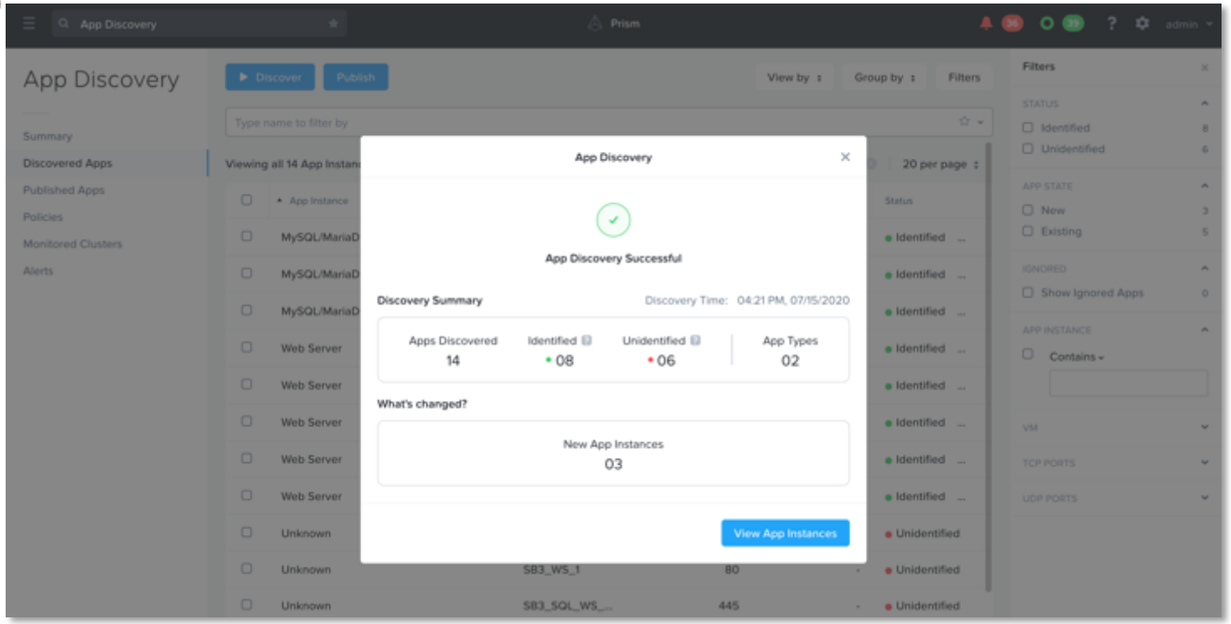
Discovery

Benefits

- Identify application to VM dependency
- Understand full-stack

Advantages

- Agentless
- Fast process with Cloud engine



Key capabilities

- Out-of-the-box rules
- Real time discovery
- Review flow
- API for CMDB integration

Discovery Using the Nutanix Cloud

IPFIX data is collected from VMs, no agent necessary, and synced from Prism to the Nutanix Cloud

The Nutanix Cloud analyzes that data and syncs its findings back to Prism

Prism uses the cloud data along with the configured Discovery Policies to store and display the identified applications

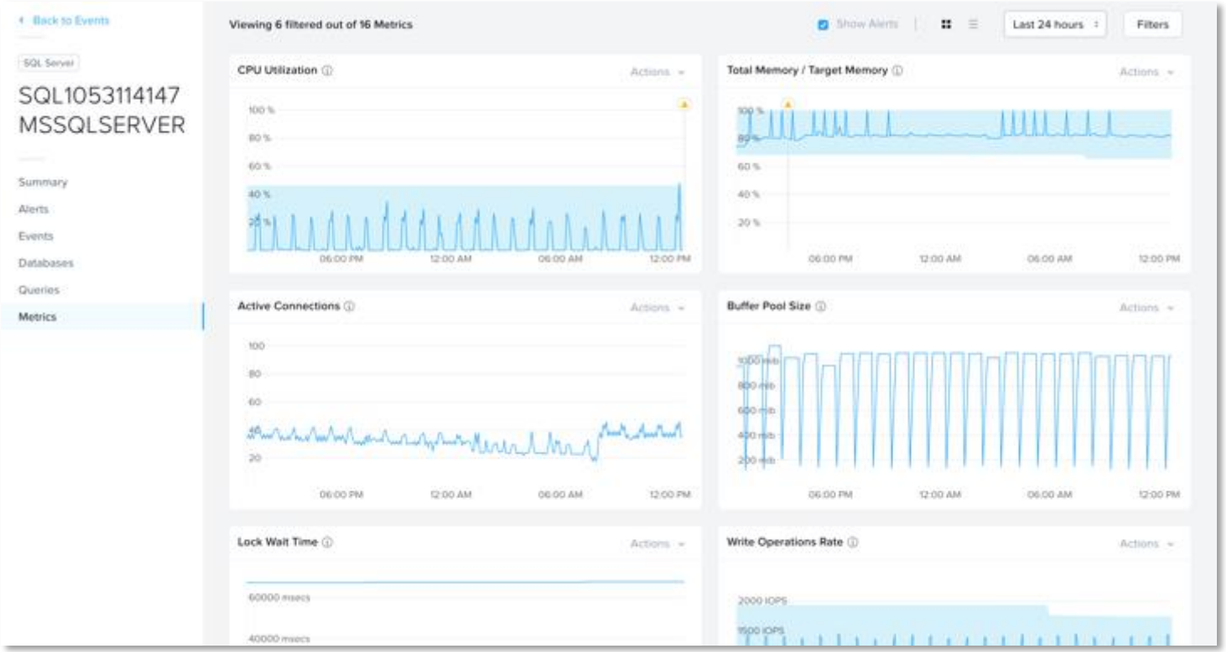
SQL Server Monitoring

Benefits

- Understand how infrastructure impacts applications
- Quickly isolate problems between infrastructure and application layer

Advantages

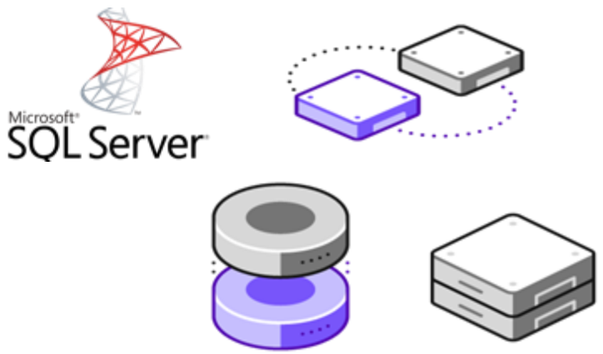
- Agentless
- Reduced RCA time for application issues

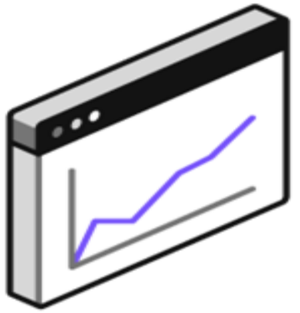


Key capabilities

- Visibility into databases, queries and metrics
- Behavior learning and anomaly detection
- SQL specific alerts and custom alerting policies

SQL Monitoring with X-Stream





A containerized Nutanix collector in the Prism Central VM gathers data for each configured SQL Instance and uses the X-Stream interface to store them

The X-FIT machine learning engine analyzes that data and uses it to generate insights and alerts

The SQL application data and insights are available for troubleshooting and automation

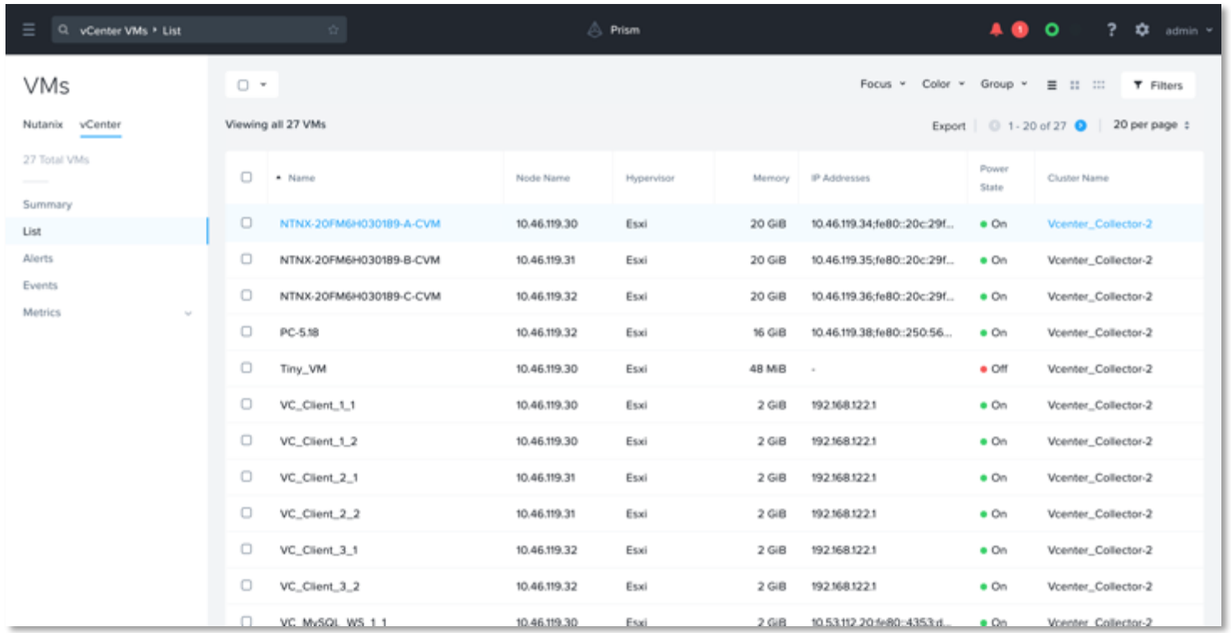
Non-AOS VM Monitoring & Remediation

Benefits

- Single pane of glass for entire virtual env including non-AOS env
- Reduce spend and time managing multiple VM monitoring tools

Advantages

- Apply X-FIT machine learning to entire virtual infrastructure
- Sole tool for connecting insights across env to smart automation



Key capabilities

- Capacity planning
- Metric visibility in Prism
- Anomaly detection and custom alert policies and Auto-remediation with X-Play

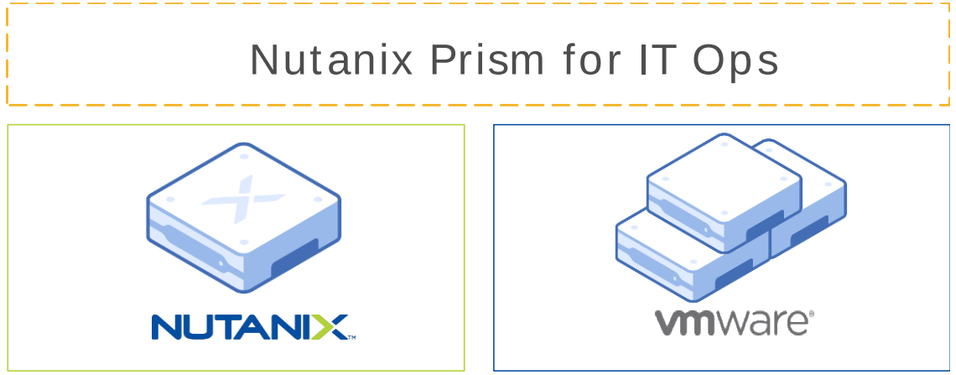
Value Pro: Prism for Broader IT Ops Capability

Background

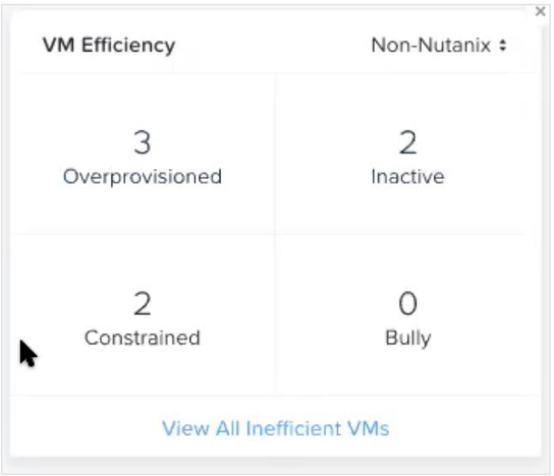
- Prism for IT Ops has anomaly detection for VMs running on AOS only
- X-Play offers low code/no code automation, but VM/Host/Cluster had to be on Nutanix AOS

New Functionality

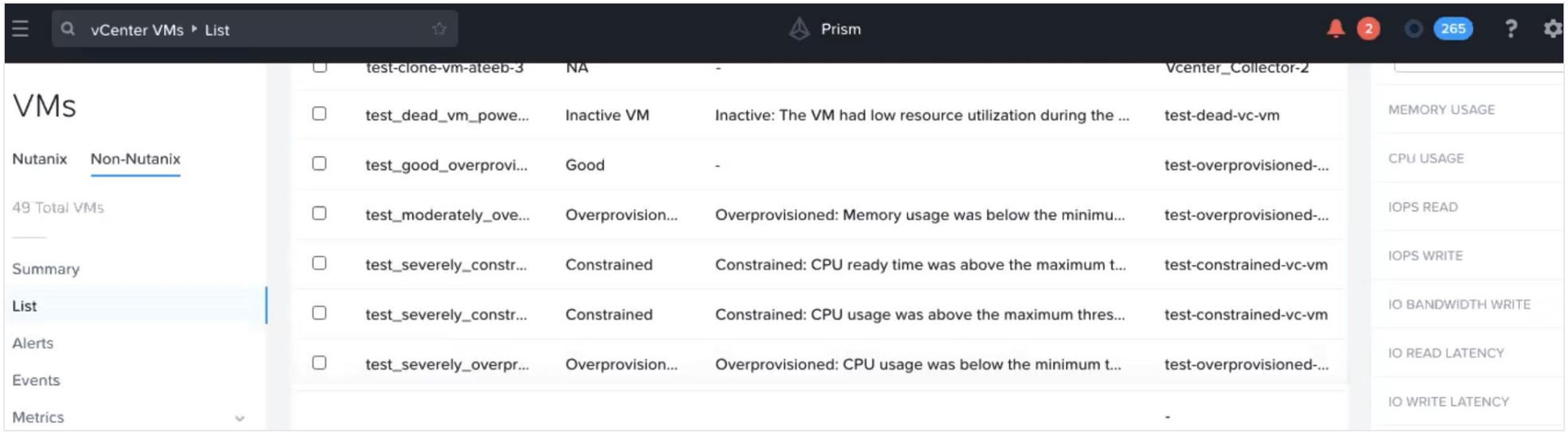
- Prism for IT Ops expands support for vCenter, becoming the IT Ops tool of choice not just for AOS, but also for VMware infra
- M/L driven anomaly detection now also for vCenter VM/Host/Cluster
- X-Play trigger and action now extend to vCenter VM/Host/Cluster



Efficiency Detection for vCenter VMs



- First add vCenter to PC : host id /name/password
  - We need 21 days of continuous data for VM efficiency status to work
- Non-Nutanix VM shown in the dashboard
- Filtering also supported
- Tagged as ***Good***, ***Inactive***, ***Constrained*** or ***Overprovisioned***.
- Currently SQL monitoring & App Discovery are not applicable to VMs running on non-Nutanix.



Benefits That PRISM Can Deliver

Just-in-Time Forecast & Planning

Accurate alignment with business growth

Intelligent Monitoring and Optimization

AI powered Monitoring and Optimization

Discovery and App Insights

Operational and Resources Automation

Higher service quality via codeless Automation

Cost governance with chargeback and budgeting

IF

Shortage

Anomaly

Inefficiency

Slowdown

Bottleneck

THEN

Expansion Plan

Team notification

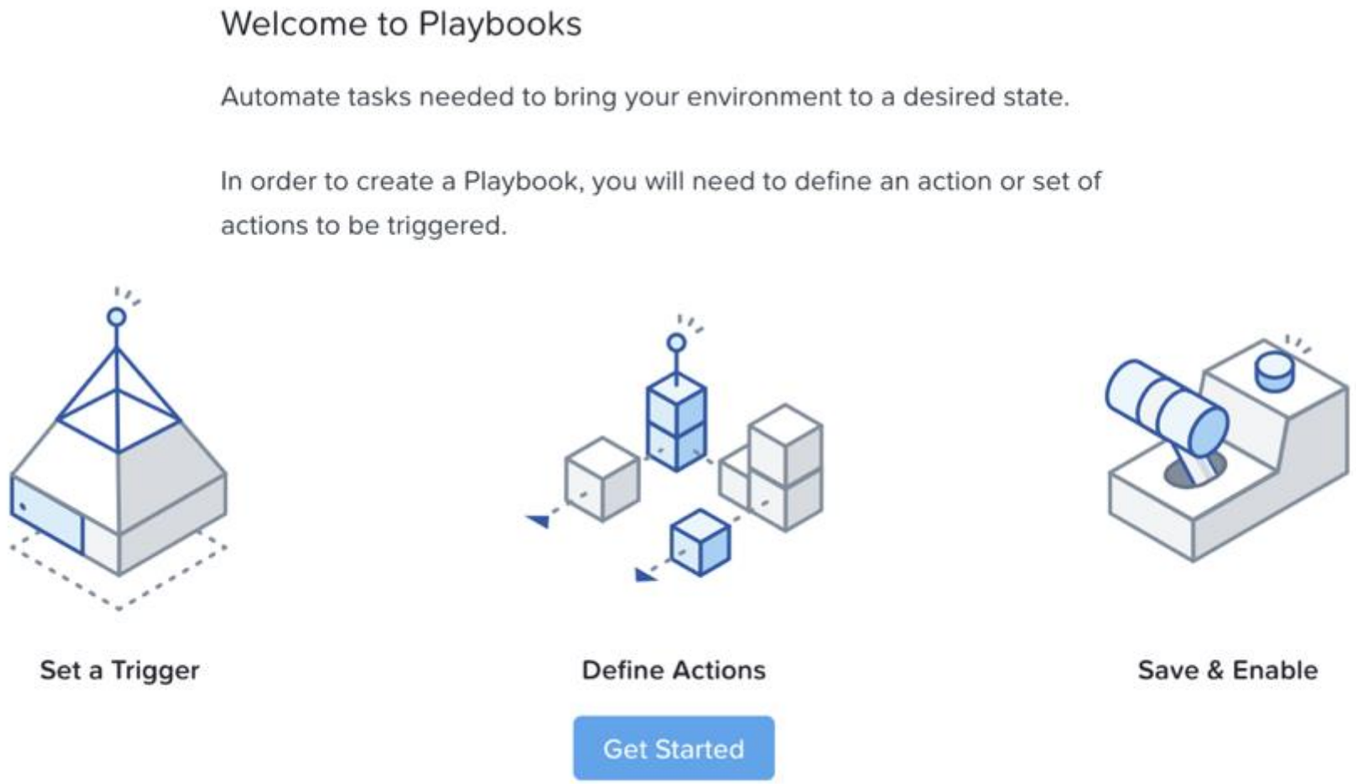
Right sizing

Custom actions

Resource relief

How to Create Operational Automation

Automate Remediation of Issues



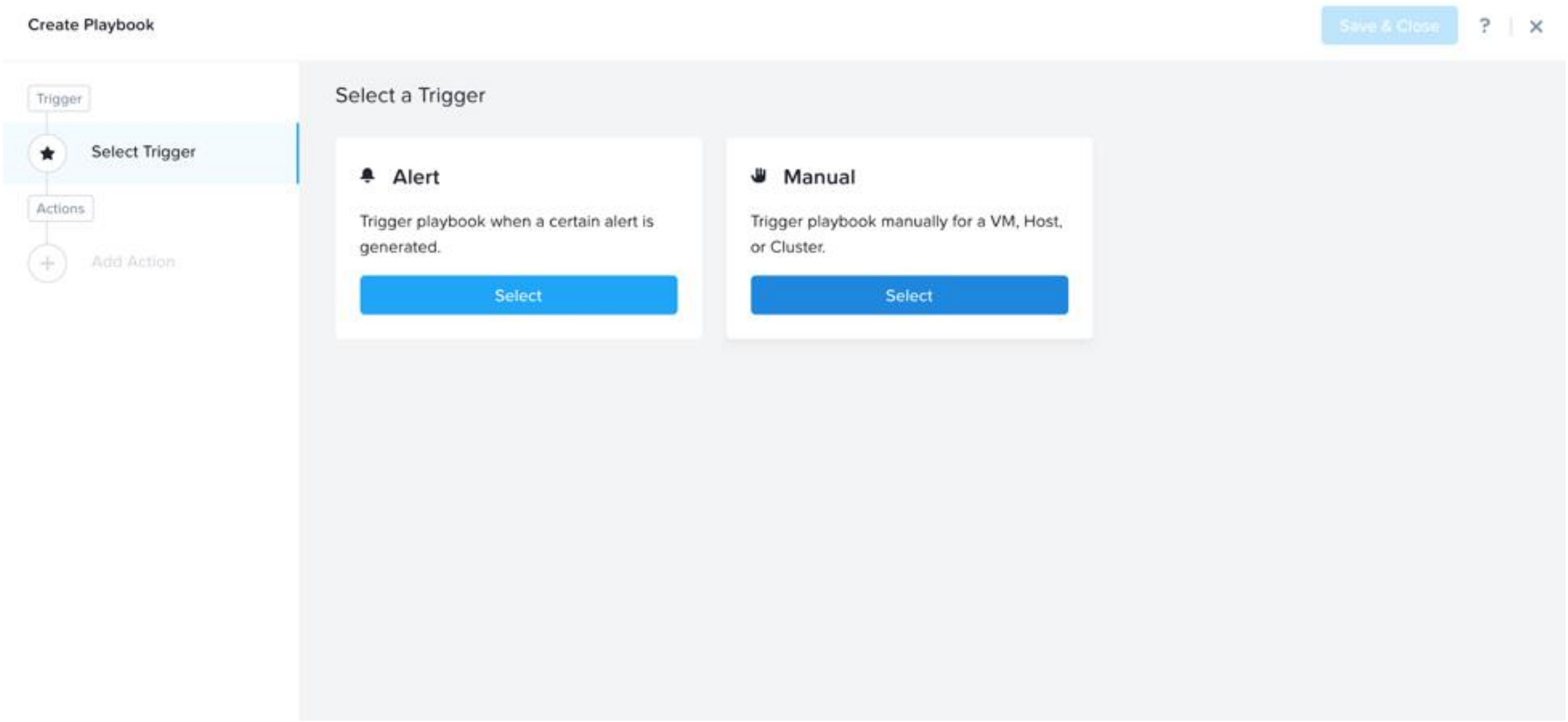
What is it?

- Automatic links intelligent signal with automated actions
- Powered by X-PLAY, playbook for Codeless task automation
- One-click centralized upgrades to hundreds of clusters without disruption.

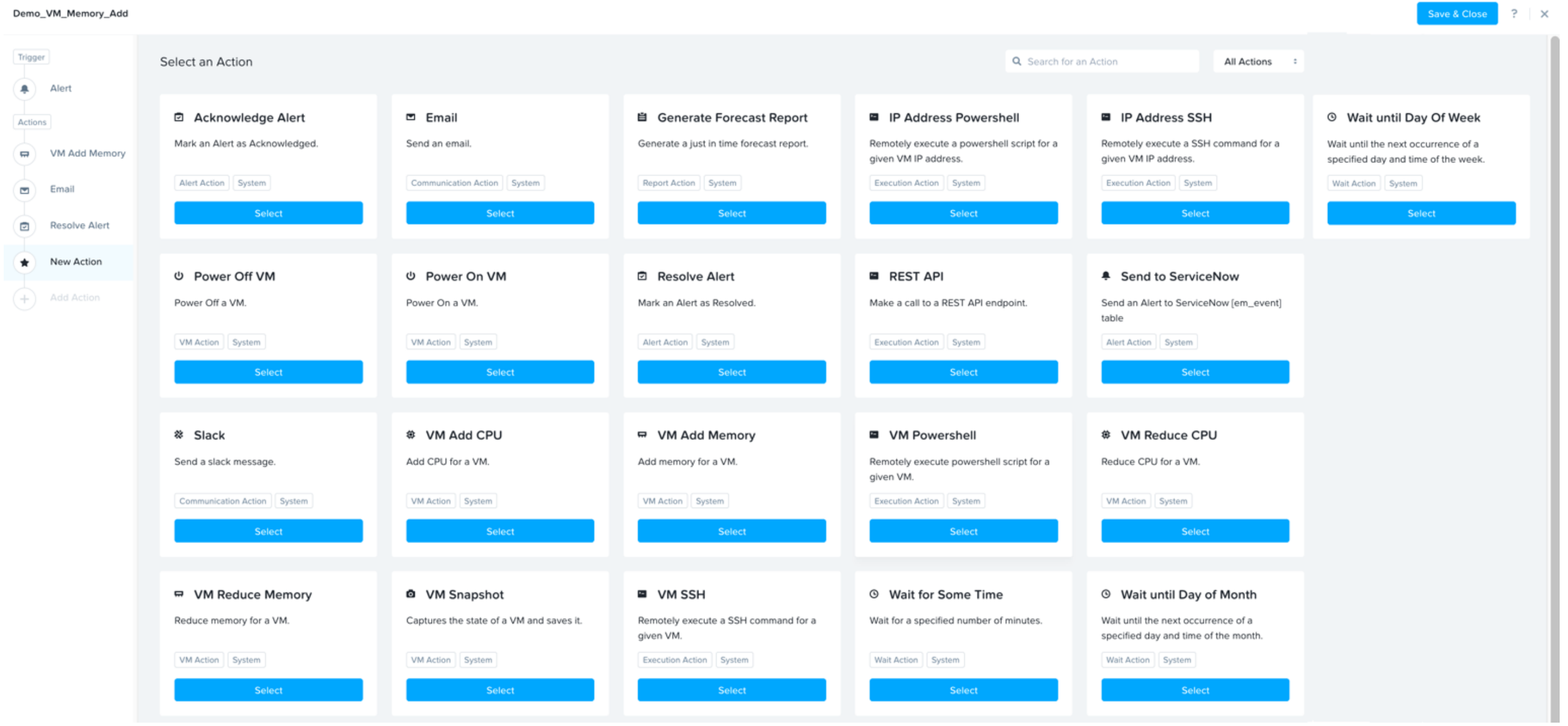
Benefits:

- Smart Automation, helps with scaling business
- Lower admin overhead – remove alert storm and let admin focus on what's important
- Integration with ITSM Tools

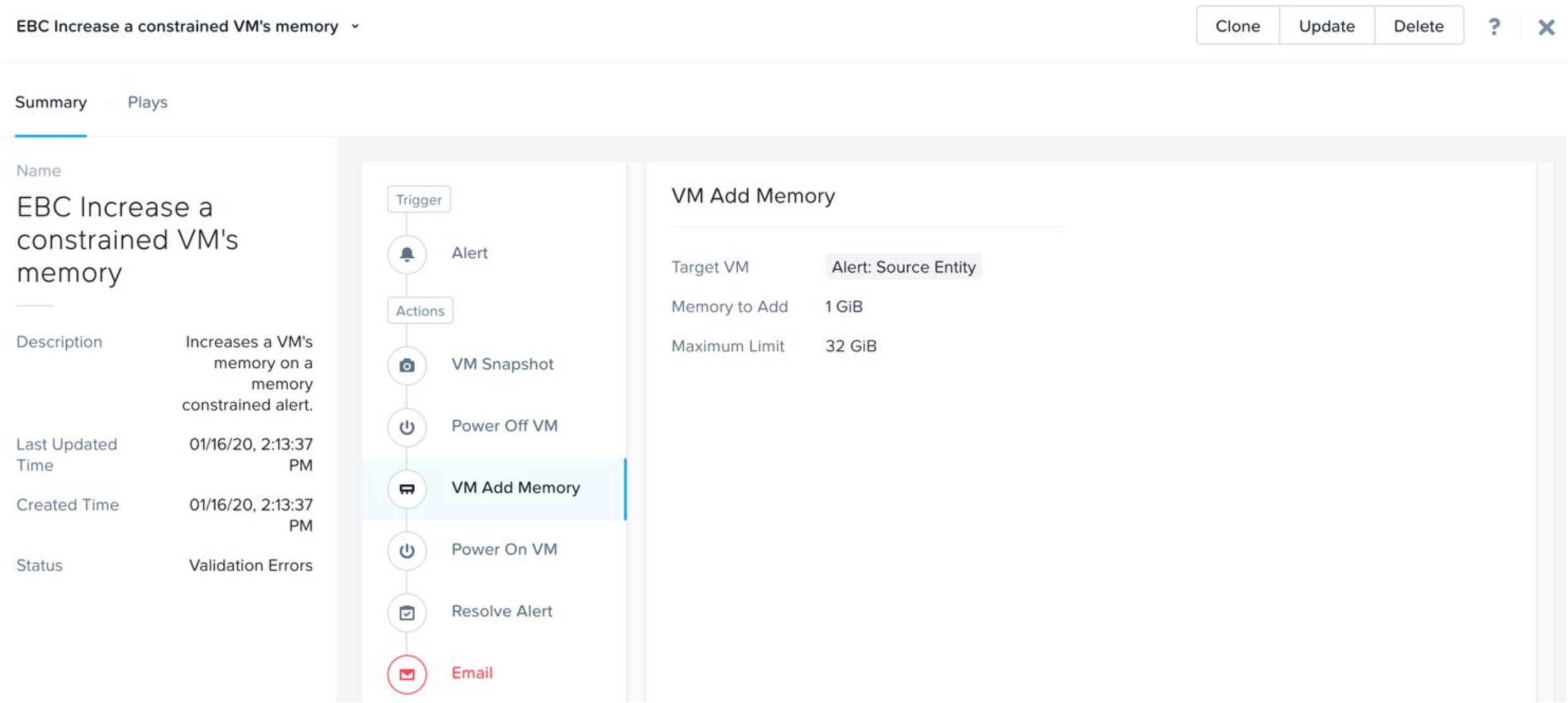
Playbook: If-This-Then-That



Suite of Actions



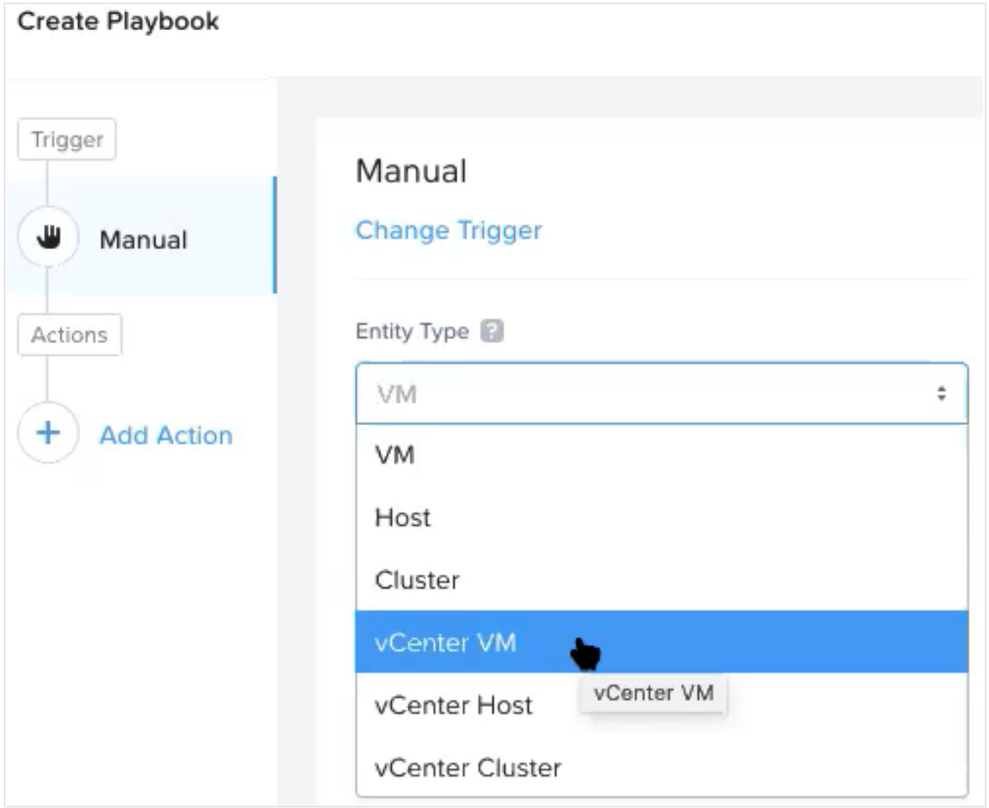
Automation in Action



X-Play vCenter Integrations

FEATURE

- First add vCenter to PC : host id /name/password
  - After that PC automatically populates vCenter vm/hosts/cluster
- Entity Type: vCenter VM/Host/Cluster
  - Supported for Trigger and Action
- Most actions on X-Play are supported*
  - Power Off VM
  - Power On VM
  - VM Add CPU
  - VM Add Disk
  - VM Add Memory
  - VM Expand Disk
  - VM Powershell
  - VM Reduce CPU
  - VM Reduce Memory
  - VM Snapshot
  - VM SSH
  - JITF Report Action
- Everything else just like regular playbook



** Unsupported actions will fail with notification on unsupported action; Support to be expanded in future release*

More Examples…

- Receive planning reports automatically when a cluster has a resources crunch

- Manually trigger a sequence of actions with just 1-click

- Schedule automation to take place only during a maintenance window

- Control when the automated action happens

- Many more…

Cost Management

SaaS based capability that delivers private cloud VM cost metering based on a built-in TCO Model; provides Chargeback capability by mapping resource costs to Cost centers and enables financial control through budget management.

Features covered:

- VM Cost Metering (using TCO Model)
- Chargeback
- Budgeting

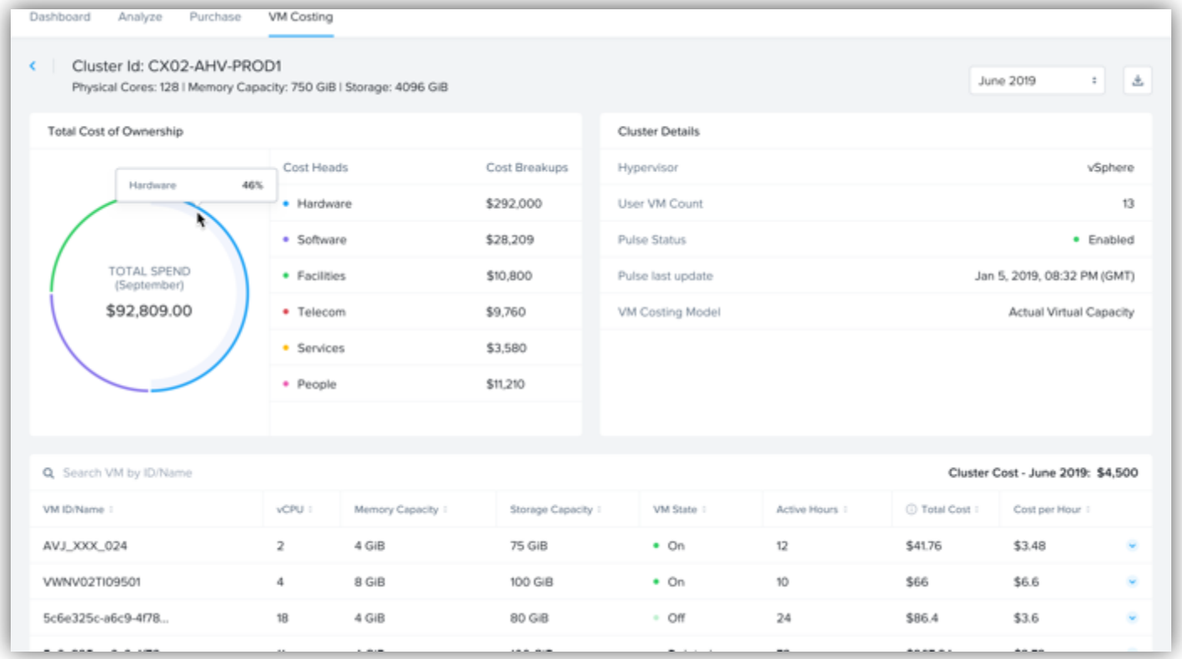
VM Costing

Benefits

- Out of box visibility to unit VM cost
- Built in TCO framework
- Multiple VM Costing models

Advantages

- Auto Discovery of Clusters
- VM costing with Snapshots cost



Key capabilities

- Benchmarked out-of-box TCO inputs
- Analyze feature to slide and dice data
- Daily data sync with SaaS instance

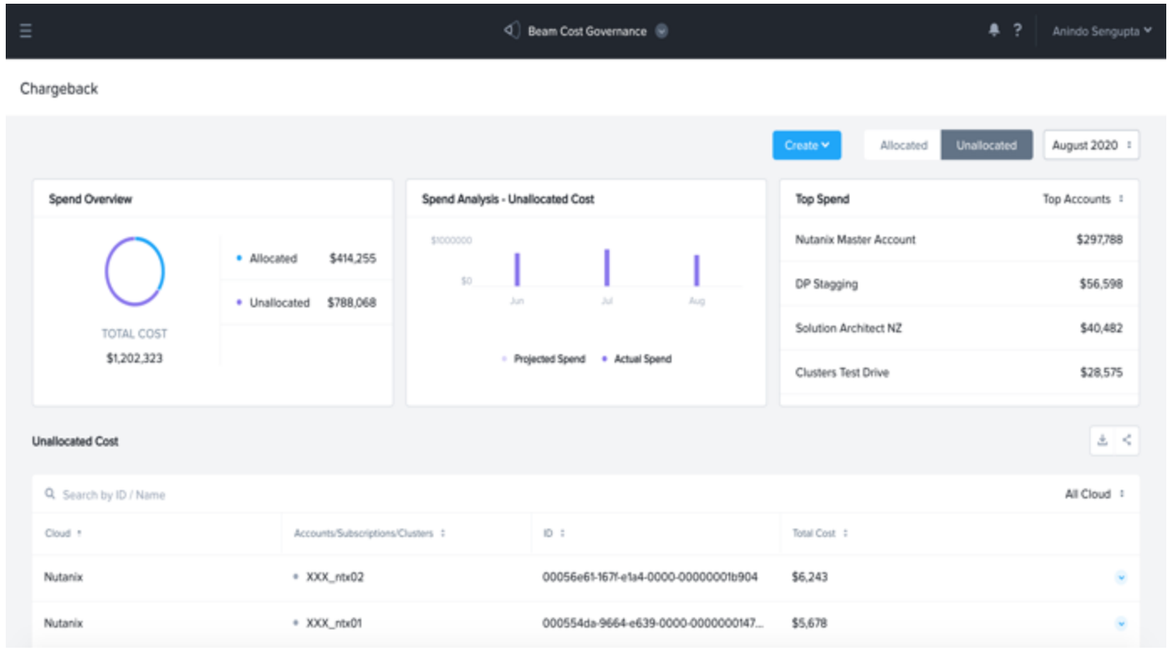
Chargeback

Benefits

- Highly customizable cost centers using Clusters, Categories mapping
- Prebuilt Cost center detailed reports

Advantages

- Ensures each cost center has unique resources mapped to it
- Extend to multi cloud use case



Key capabilities

- Ability to allocate untagged VMs
- Schedule monthly reports to email
- Create Business Unit and Cost center hierarchy

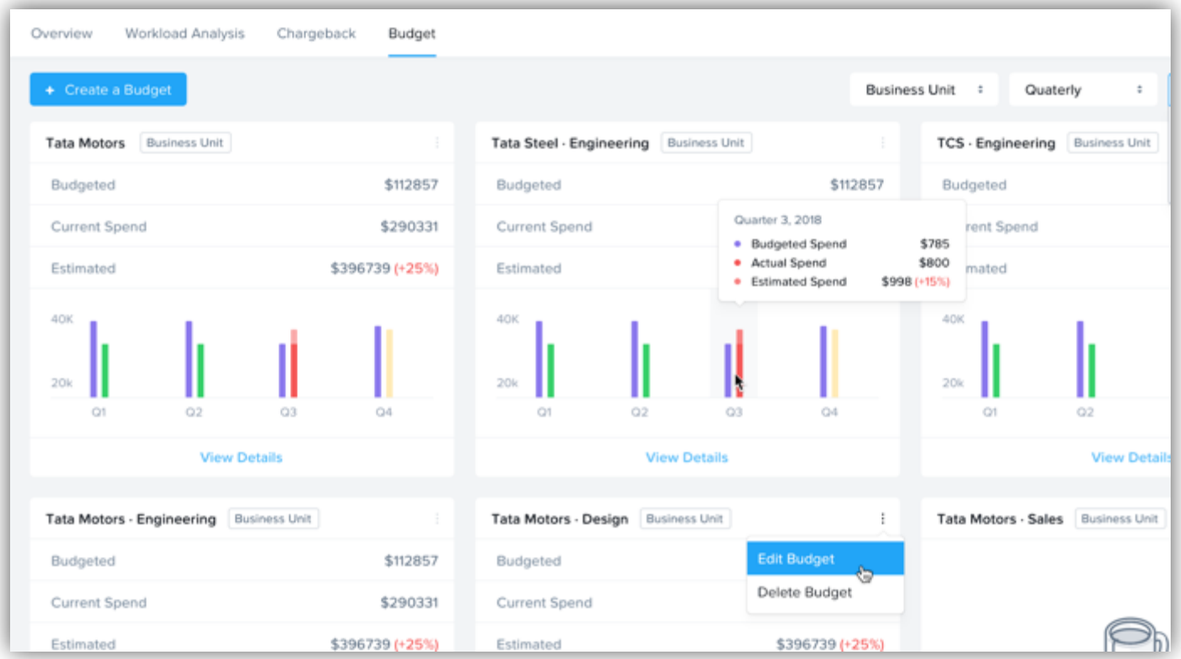
Budget

Benefits

- Automated alerting
- Algorithmic quarterly projections
- Variance Analysis

Advantages

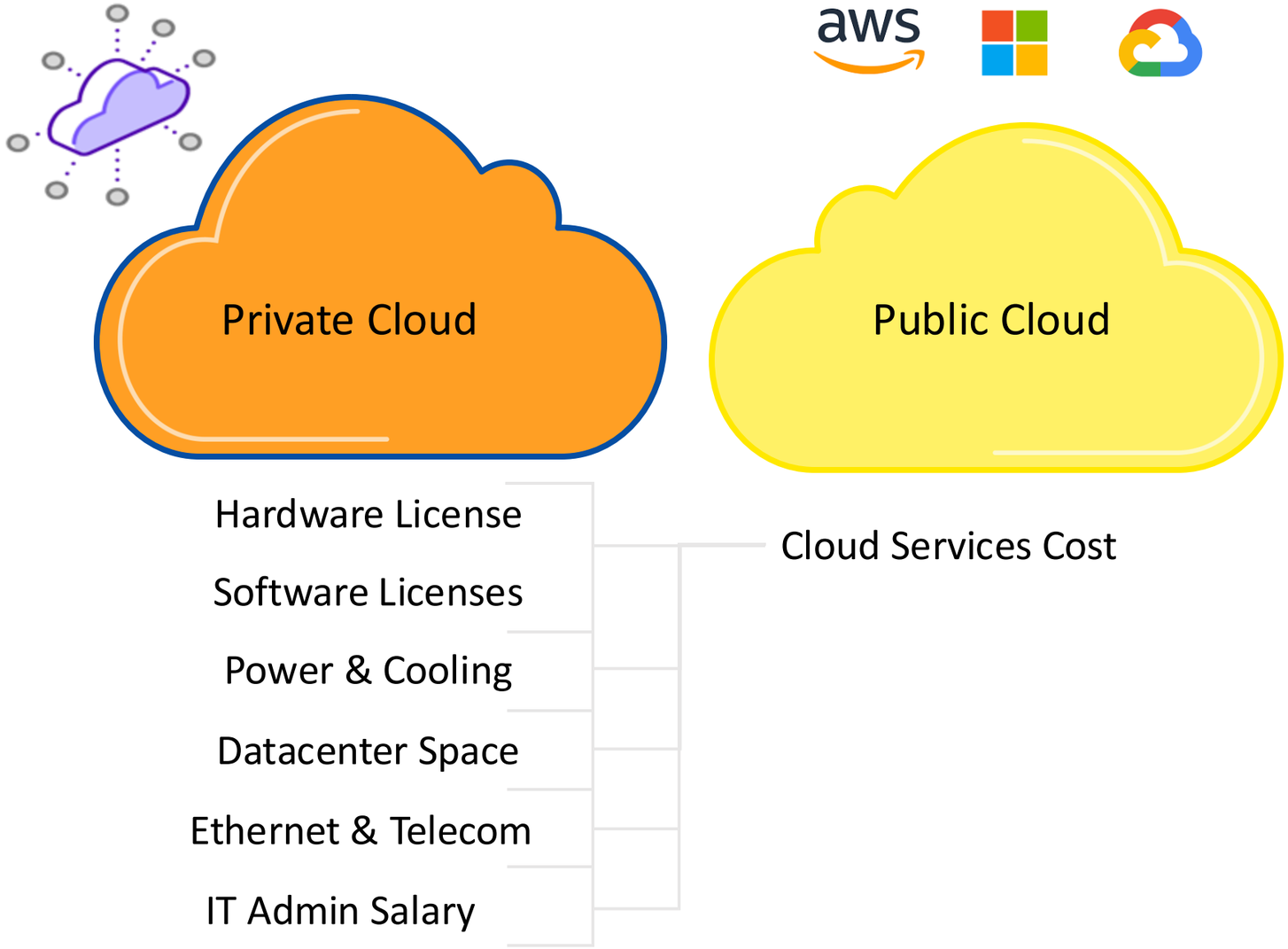
- Budget setup on resource groups
- Breakdown by service type



Key capabilities

- Multiple threshold-based alerts
- Schedule monthly reports to email

Comparing Cloud Costs Accurately



Centralize Cost Visibility

Unified console for public and private cloud cost monitoring shows resource config details and amount spend

TCO based Cost Comparison

A built-in TCO model shows true cost of Nutanix resources. TCO model in development for public clouds.

Generate Workload Costs

A tag-based approach allows for easy workload definition & dynamic cost calculation

To Summarize

Nutanix **Prism's IT Operations tiers** delivers infrastructure **Automation** that transform **infrastructure Ops** into **IT-as-a-service**, enabling agile application development, **rapid deployment** and **one-click management**

- **IT Task Automation**
  - Remove complexity and operator errors by turning any task into a push-button automation
  - Improve IT efficiency by reducing repetitive tasks

- **Infrastructure Monitoring & Optimization**
  - Identify and optimize under-utilized resources, overprovisioned VMs, and unnecessary cost sinks
  - Gain instant visibility into utilization, growth rates and cost spent
  - Just in time forecasting and planning for infrastructure for Capacity expansion to meet future workload growth

THANK YOU