



SERRA LABS CPO

Cost-Performance Optimization for Cloud Applications

Q3/2020

Cloud Cost-Performance Problem



Cloud Application Usage Dynamically changes while
Cloud Application Capacity remains Inelastic
resulting in
Waste or Slowdown or Both

Waste due to
Over-Capacity
relative to Usage

Excess Costs



35% Waste

(Flexera Cloud Surveys 2018-20)

Slowdown due to
Under-Capacity
relative to Usage

User Dissatisfaction



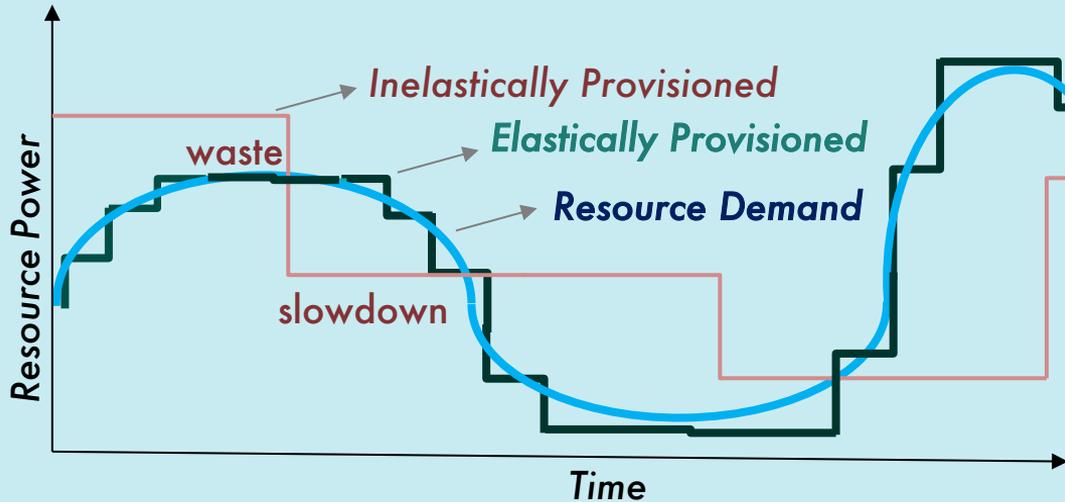
48% Slowdown

(HIMSS Cloud Survey 2018)

Addressing the Cloud Cost-Performance Problem

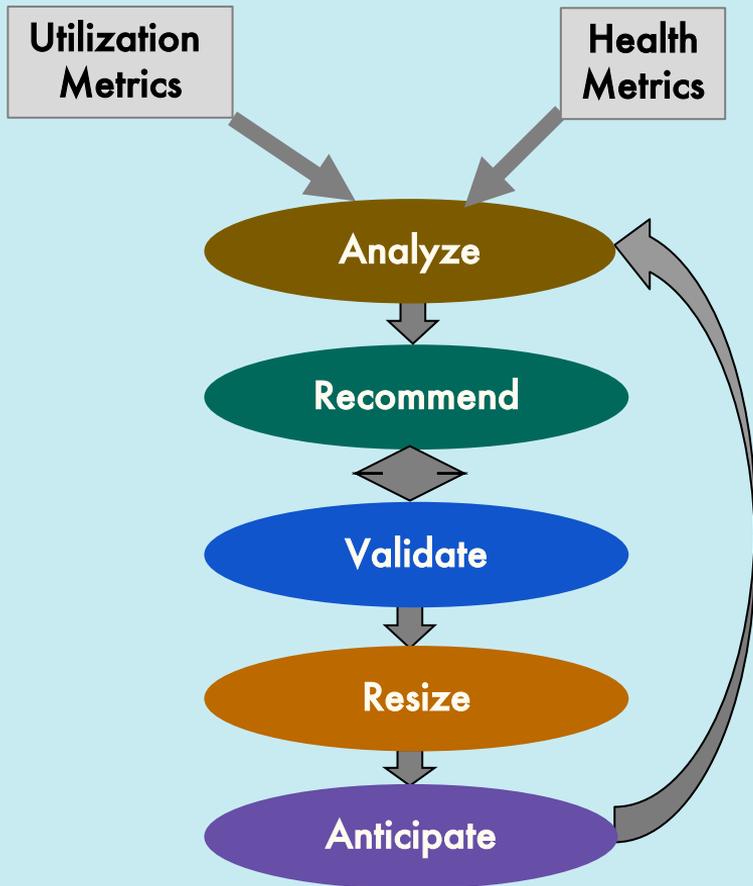


Cloud Capacity Management needs to match the Elasticity of Cloud Application Resource Demand to Minimize Waste and Avoid Slowdown



Elastic versus Inelastic Cloud Resource Provisioning to Meet Dynamic Resource Demand

CPO Approach

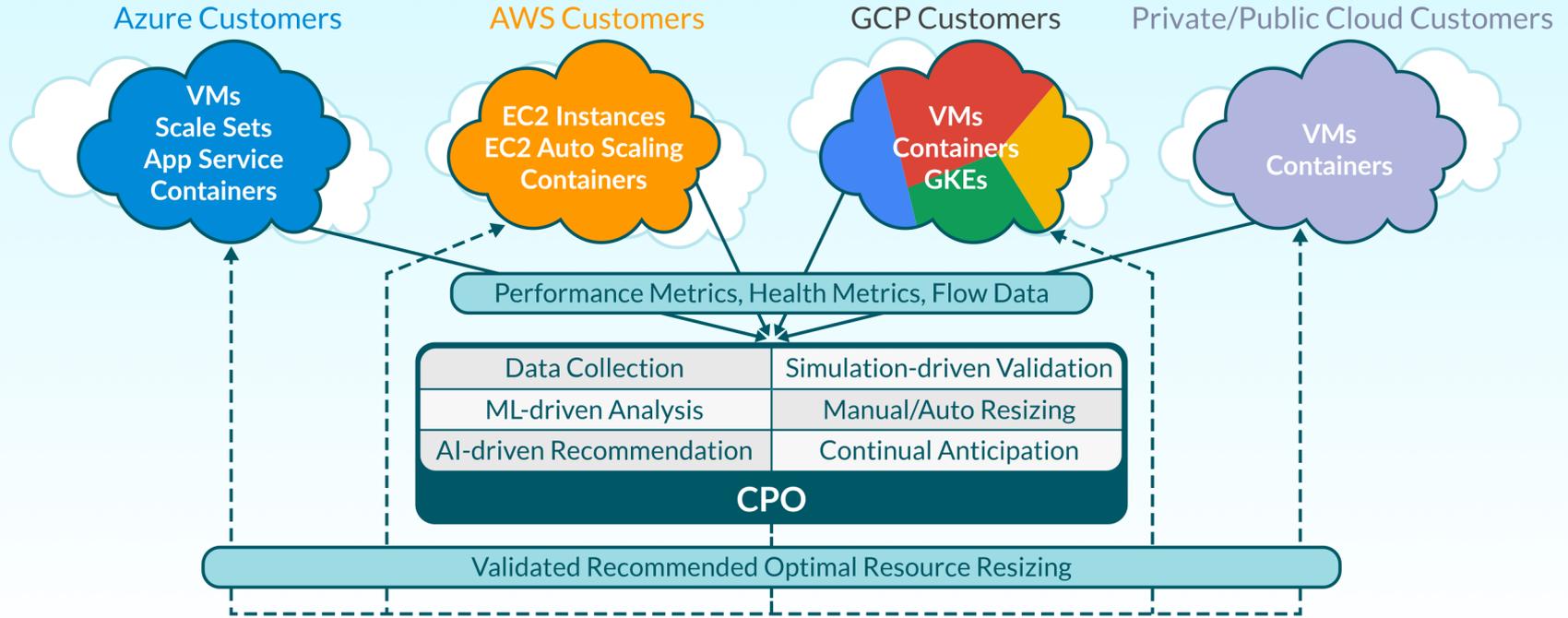


- ML-driven Cloud Application Resources for Utilization and Health Levels
- AI-based Recommendations for Multiple Optimization Goals that Differently Trade-Off Cost and Performance
- Simulation-based Validation Optimization Benefits of Selected Recommendation Before Resizing
- ML-driven Continual Anticipation of Suboptimality

CPO Deployment Architecture



CPO SaaS Architecture



Comparison with Current Solutions



RightScale (Flexera)
CloudHealth (VMware)
ParkMyCloud (Turbonomic)

Cost Optimization

Mostly Cost

*Ignores Performance,
Here & Now,
Unvalidated,
Often Simplistic*

Broad Focus

*Governance &
Management,
Cost often just about
billing analysis,
Performance often not
considered*



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Labs



**Right Performance
at the Right Cost,
Continually**

Mostly Performance

*Ignores Cost,
Reactive,
More about App Logic,
Monitoring Focused*

Flexera
Nutanix Beam
Morpheus Data

AppDynamics
New Relic
DataDog
SignalFx

Performance Optimization

CPO Solution



- Delivered as SaaS
- Pay-Per-Use & Subscription Plans
- Browser-based UI, No Installation Needed

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Manage VM Optimization

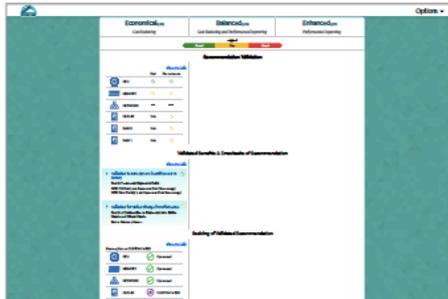
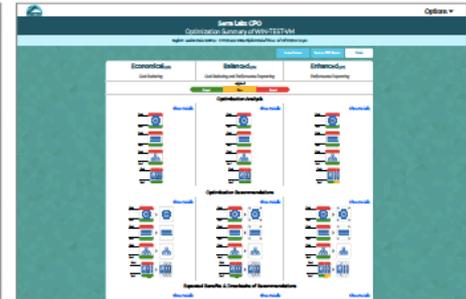
Selected VMs: Windows (Class Server) | CPO Optimization

Filter by Status: Not Analyzed | Analyzing | Analyzed | 0 items

ID	VM Name (1)	VM Name (Class Server (1))	OS Type	VM Size	Region	Status (1)	When
0	WIN TEST VM	CPO Devs Subregion	Windows	Standard 80GB	us-east-1	Optimized	4/9/2020 5:25pm
0	WIN800 VM	CPO Devs Subregion	Linux	Standard 80GB 2x	us-east-1	Optimized	4/9/2020 5:15pm
0	WIN TEST VM2	CPO Devs Subregion	Windows	Standard 80GB	us-east-1	Analyzing	4/9/2020 5:15pm
0	WIN8 VM	CPO Devs Subregion	Linux	Standard 80GB	us-east-1	Analyzing	4/9/2020 5:15pm
0	WIN800 VM	CPO Devs Subregion	Linux	Standard 80GB	us-east-1	Analyzing	4/9/2020 5:15pm

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VM Optimization Report

VM Name	OS Type	VM Size	Region	Status	When
WIN TEST VM	Windows	Standard 80GB	us-east-1	Optimized	4/9/2020 5:25pm
WIN800 VM	Linux	Standard 80GB 2x	us-east-1	Optimized	4/9/2020 5:15pm
WIN TEST VM2	Windows	Standard 80GB	us-east-1	Analyzing	4/9/2020 5:15pm
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WIN800 VM	Linux	Standard 80GB	us-east-1	Analyzing	4/9/2020 5:15pm



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Optimization Summary of WIN-TEST-VM

Optimization Recommendations

Recommended VMs

VMs to be Analyzed

VMs to be Optimized

VMs to be Deleted

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Optimization Summary of WIN-TEST-VM

Optimization Recommendations

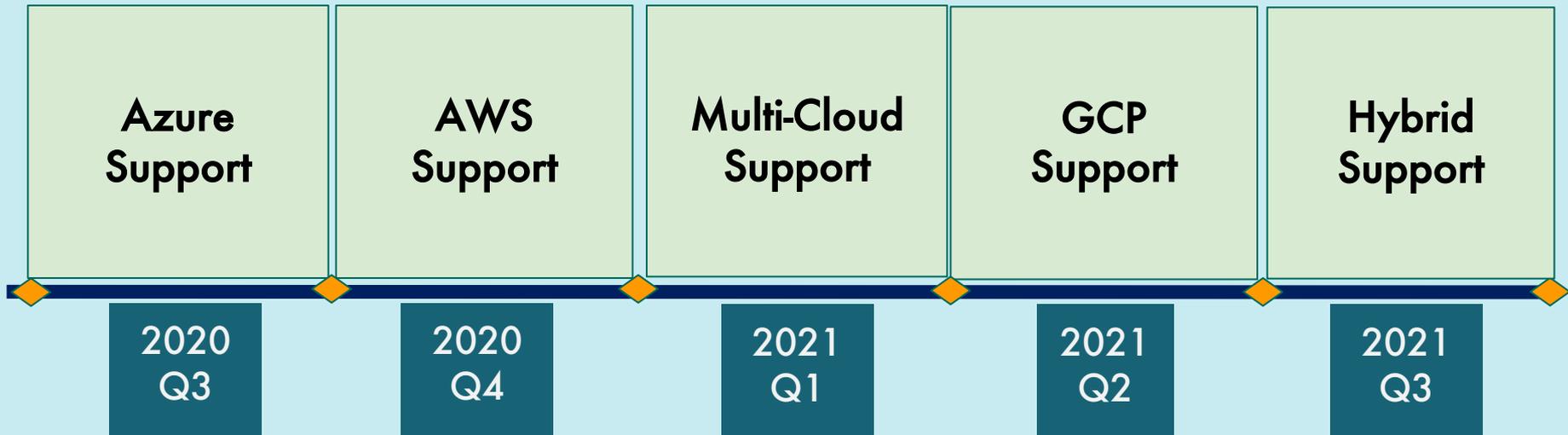
Recommended VMs

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CPO Roadmap



Summary



- Excess Costs and Poor Performance of Cloud Applications Incurred due to Inelastic Resource Sizing
- CPO is the Only Solution that Optimizes Resource Sizing for Cost and Performance Together
- Each Cloud Application can be Optimized for Its Own Cost-Performance Objective
- CPO available as SaaS for Microsoft Azure Cloud
- AWS Support in Progress, GCP and Multi/Hybrid Cloud Support Planned