



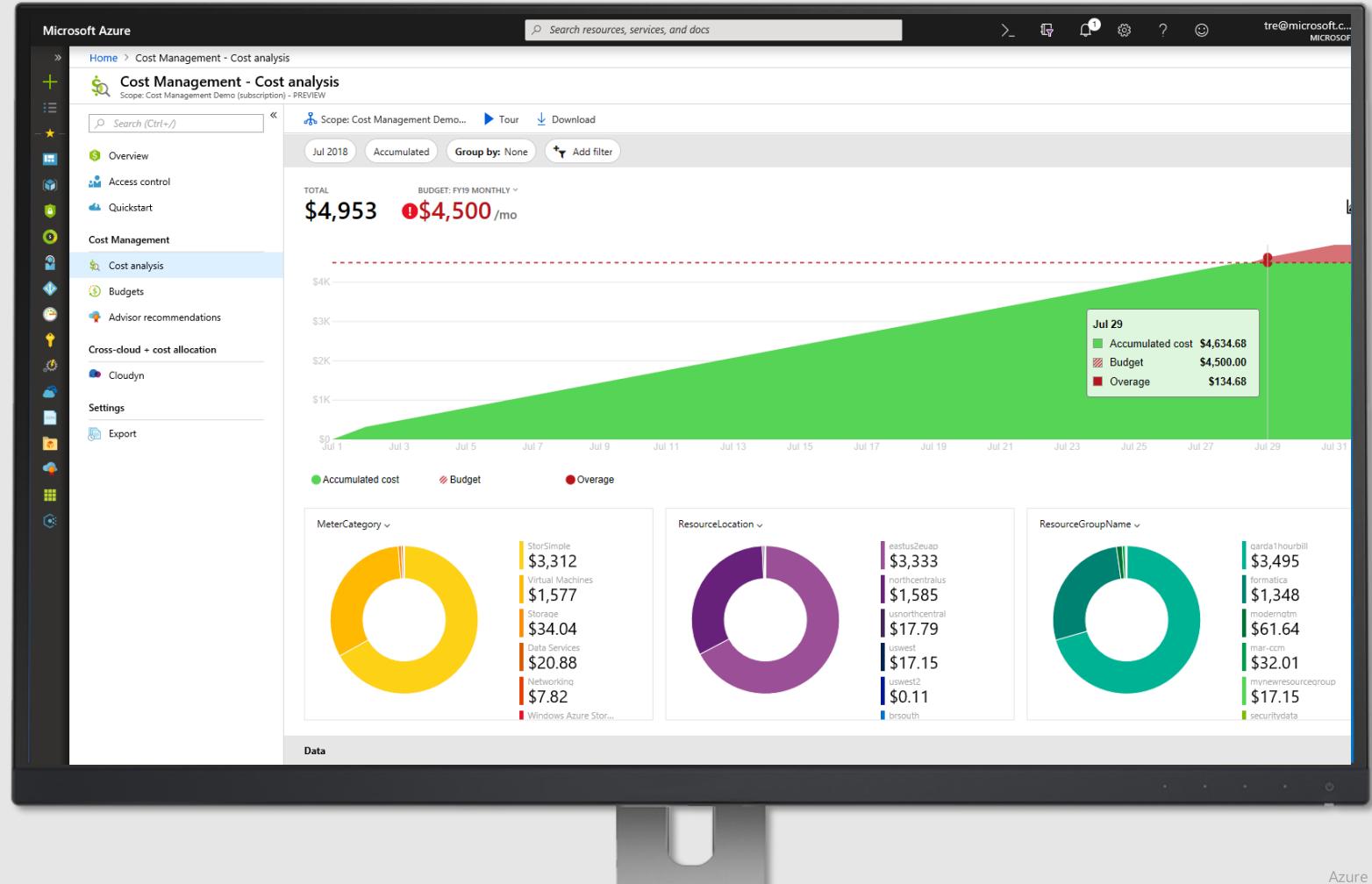
**Make the most of Azure by
optimizing your cloud spend**

Azure Cost Management

Built into Azure



- On by default
- Better experience for more users
- Richer analysis and budget alerting
- Integrated with Azure Advisor
- Reduced data latency by up to 80%
- Free to manage Azure costs



Expanding our cost saving options for Azure compute

Accelerate cloud adoption with new growth opportunities

Compute cost



Without savings options
(pay-as-you-go pricing)



With savings options

Savings options

Software

Windows Server and SQL Server workloads → Bring your existing on-premises licenses to Azure with **Azure Hybrid Benefit**

Infrastructure

Stable, predictable workloads → Get lower prices on a specific virtual machine in a particular Azure region with **Reserved Instances**

Interruptible workloads → Access low-cost unused Azure compute capacity at scale with **Spot Virtual Machines**

NEW!

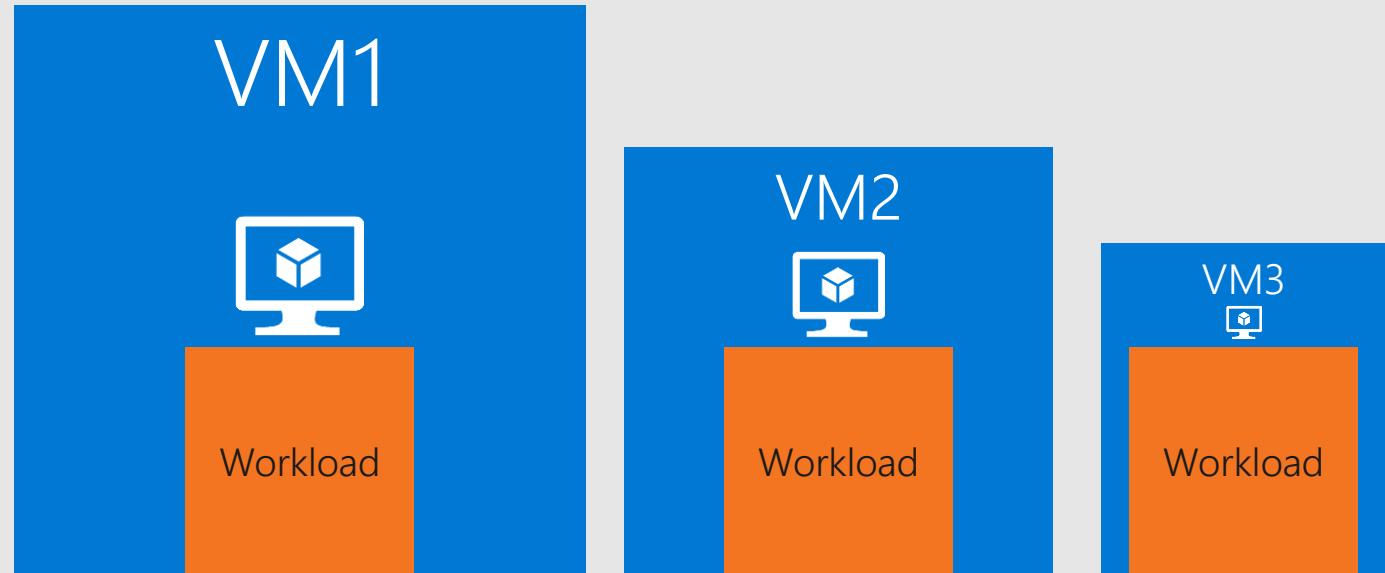
Consistent compute spend → Unlock lower prices on compute services by committing to spend a fixed hourly amount with **Azure savings plan for compute**



Right-Sizing!

The workload will run fine in all three VM sizes

- Which will a developer naturally choose?
- What about operations?
- What would finance choose?



How do you know when there are opportunities to optimize?

Managed Disk

	Ultra Disk	Premium SSD v2	Premium SSD
Latency	Low sub millisecond average (< 0.5 ms) ~1 ms P99	Sub millisecond average (< 1 ms) Less than 2 ms P99	~1 millisecond average Less than 5 ms P99
Disk size	4 GiB - 64 TiB	1 GiB - 64 TiB	4 GiB - 32 TiB
Baseline IOPS	Varies by disk size	3,000 IOPS free	Varies by disk size
Baseline throughput	Varies by disk size	125 MBPS free	Varies by disk size
Max IOPS	160,000 IOPS	80,000 IOPS	20,000 IOPS
Max throughput	4,000 MBPS	1,200 MBPS	900 MBPS

Microsoft provides solutions to continuously optimize your environment



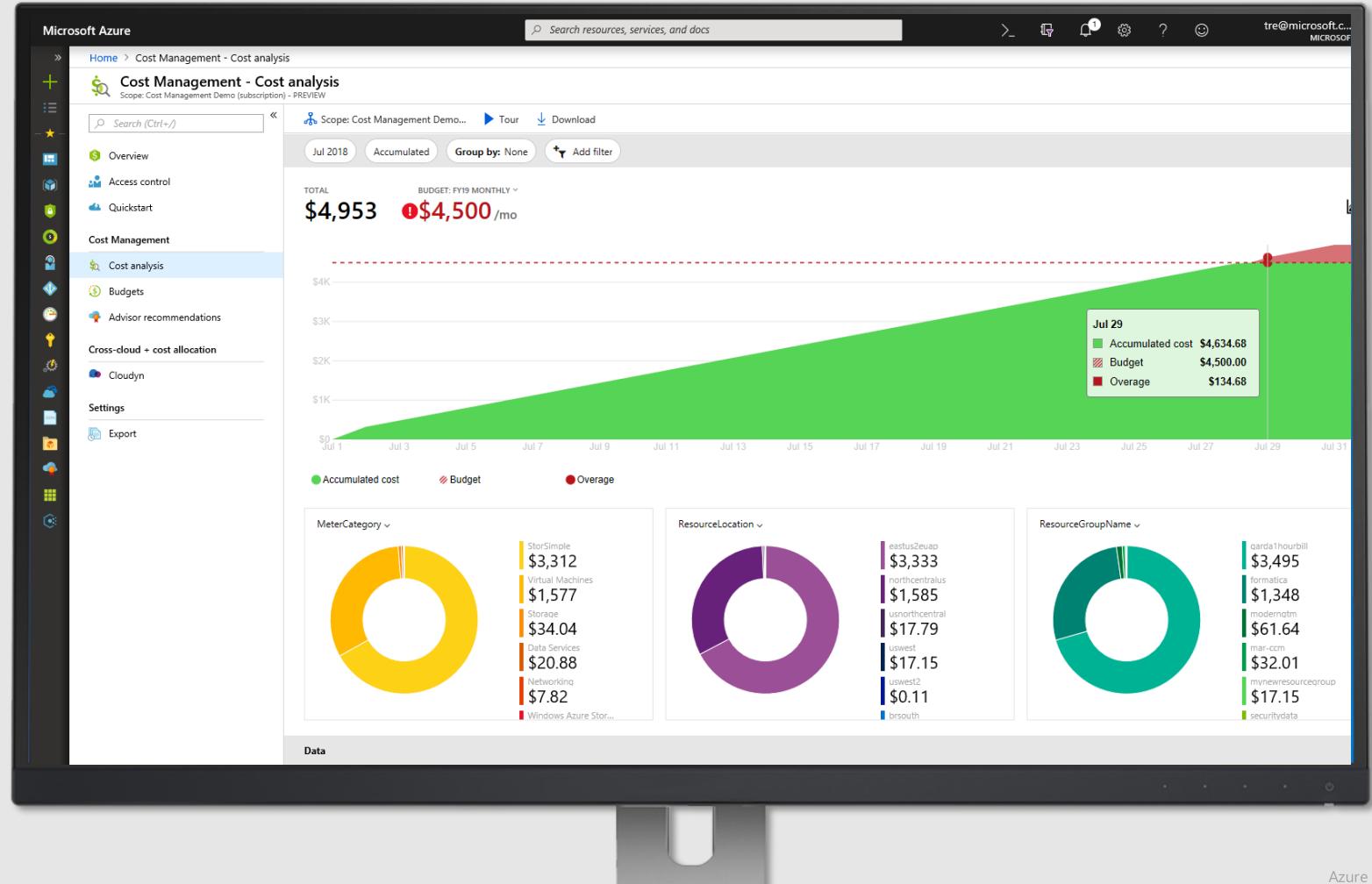
	Principles, Billing Constructs, Tools?	Functionality	Goal	
Cloud Adoption Framework		Principles	Pre-migration	To enable desired business outcomes and adopt to cloud with confidence
Well Architected Framework		Principles	Post-migration	To improve the quality of the workloads based on guiding pillars of architectural framework
RIs/Hybrid Benefit/Spot		Billing Constructs	Cost savings benefits to provide deep discounts on Azure cloud services	To reduce the total cost of ownership for predictable workloads
Azure Advisor		Tools	Recommendations to optimize and properly manage services	To provide actionable steps to improve the cost effectiveness, performance, Reliability (formerly called High availability), and security of your Azure resources.
Azure Cost Management		Tools	Monitor cloud spend, drive organizational accountability, and optimize cloud efficiency	To enables cloud spend transparency that leads to better investment decisions by providing you the tools to monitor, allocate, and optimize your cloud costs
Azure Policy		Tools	Active control and governance at scale for your Azure resources	To enforce how cloud resources are configured accordingly based on regulatory compliance, resource consistency, security, and cost management
Azure Management Groups		Tools	Efficiently apply governance controls and manage groups of Azure subscriptions	To efficiently management access, policies, and compliance for your Azure Subscription environment at scale

Azure Cost Management

Built into Azure

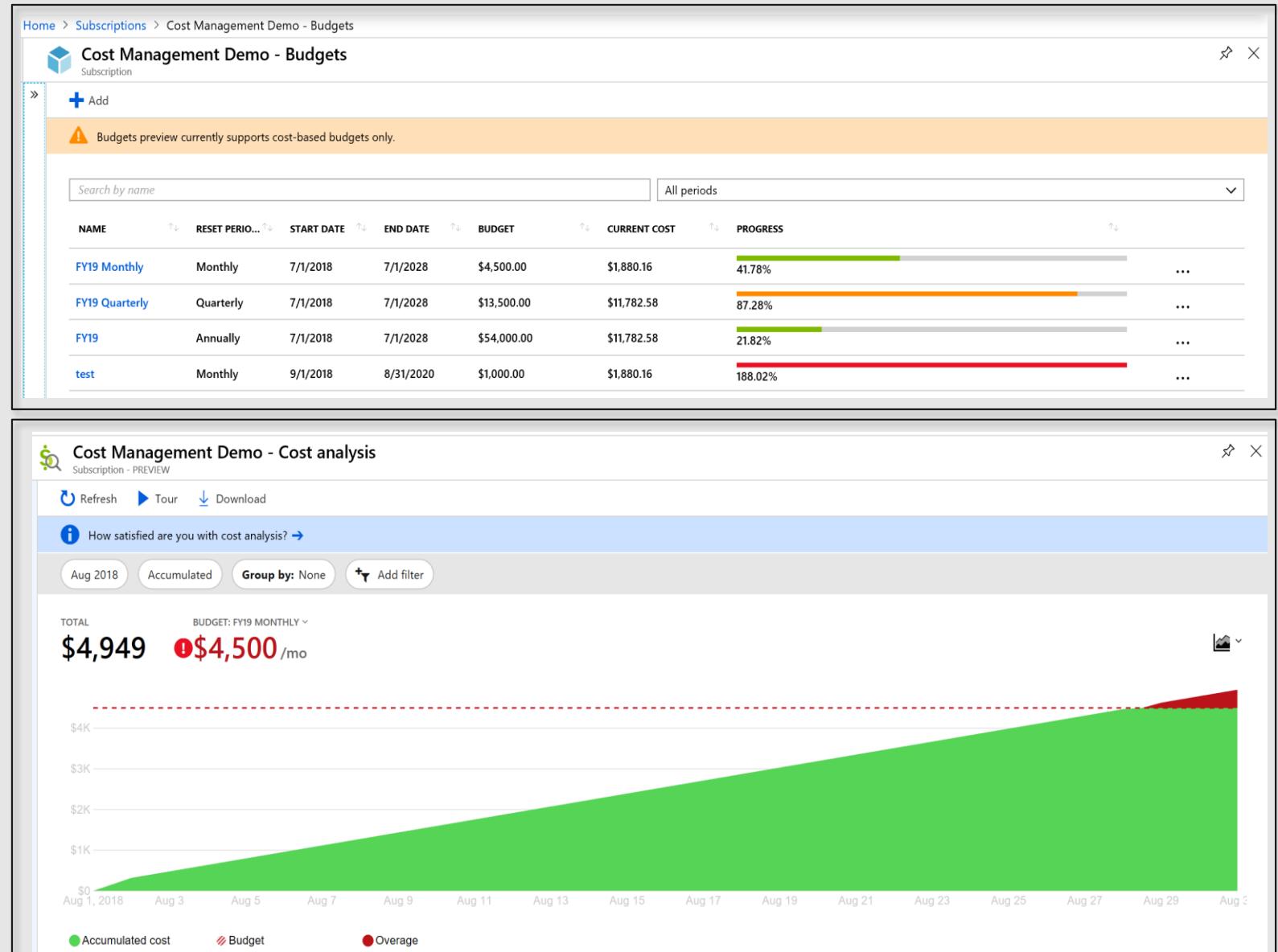


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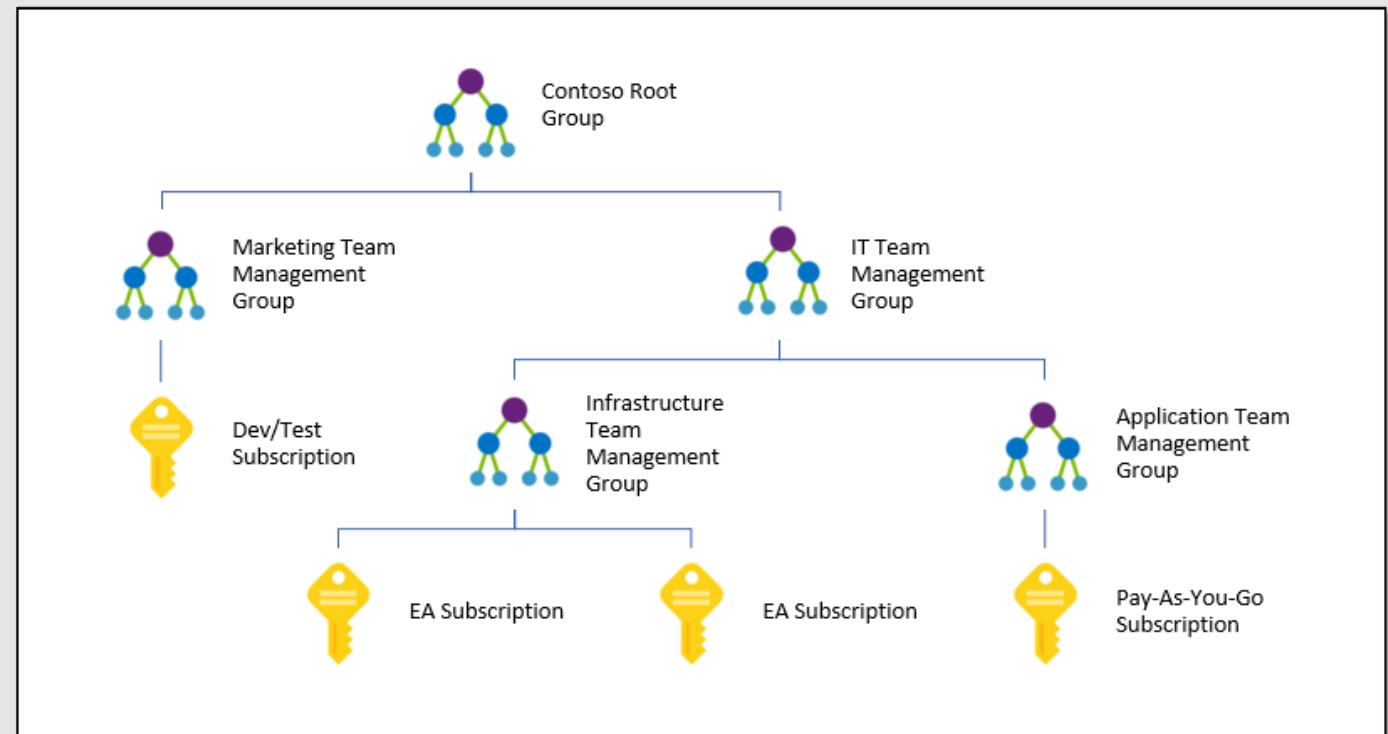
Budgets for monitoring and notifications

- Monitor your costs using budgets
- Get notified when threshold are met
- Automate with Action Groups
- Integrated into cost analysis



Management Groups to organize subscriptions

- Create a custom management hierarchy to fit your organization
- Enables RBAC, policies for tagging, cost analysis and budgets at any scope
- Shared with Policy, Security Center, Privileged Identity Management services



Tags add context for cost analysis

Finance codes

CostCenter tag, etc.

Application context

AppService tag, etc.

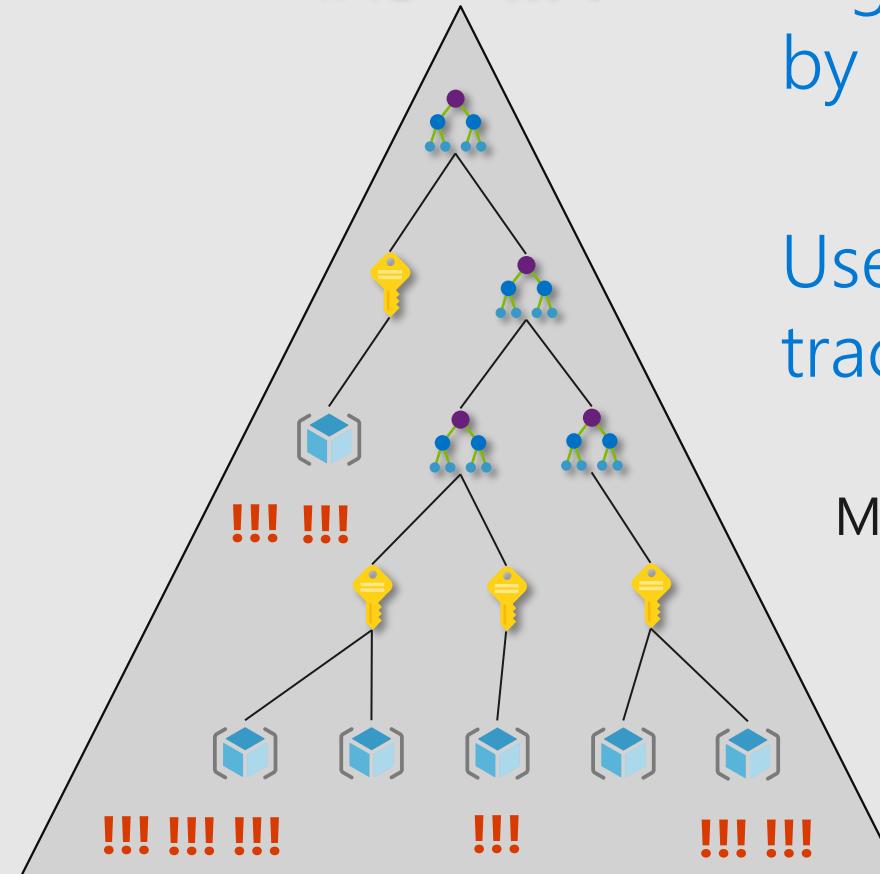
Deployment context

Environment tag, etc.

Who is accountable

BusinessOwner tag, etc.

TAG = !!! ?



Tags should be enforced by configuration policies

Use Azure Policy to set and track ARM tagging policies

MG, Subscription, RG scopes

Enforce that tags exist

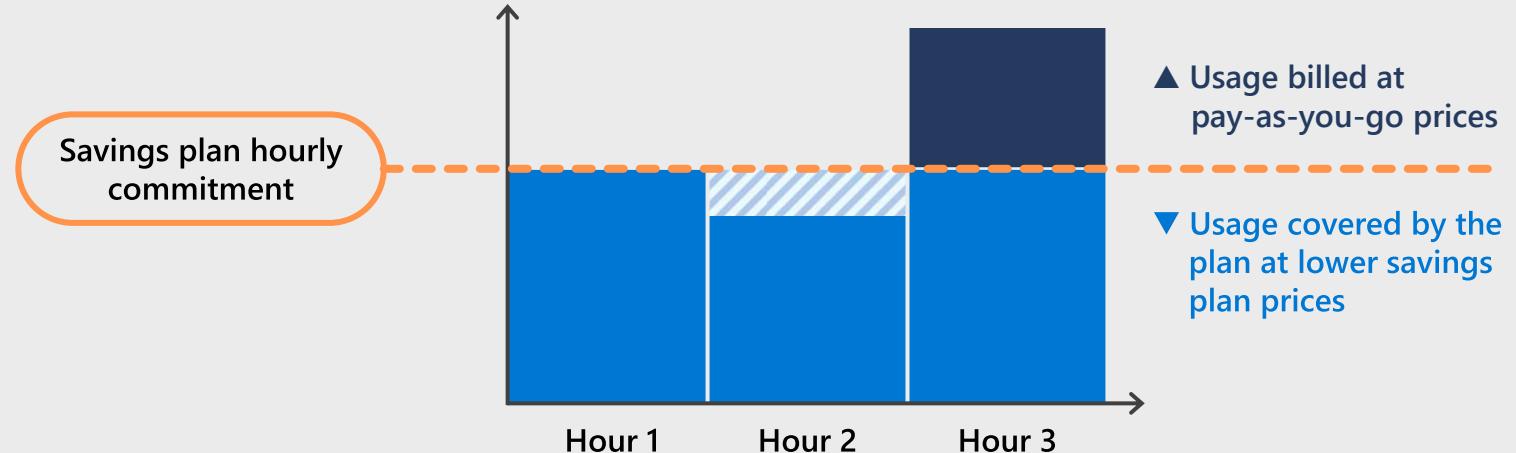
Set default values for tags

Audit if tags are missing

Introducing Azure savings plan for compute

Easy and flexible way to save on compute costs

Save money across compute services globally by **committing to spend a fixed hourly amount for 1 or 3 years**, unlocking lower prices until you reach your hourly commitment.



Unlock significant cost savings

up to 65%* compared to pay-as-you-go pricing



Optimize savings automatically

across select services globally up to the hourly commitment



Save on your terms

by customizing the plan's term length, scope, billing frequency, and hourly commitment to fit your needs

*Customers may see savings estimated to be between 11 percent and 65 percent. The 65 percent savings is based on one M64dsv2 Azure VM for CentOS or Ubuntu Linux in the East US region running for 36 months at a pay-as-you-go rate of ~\$4,868.37/month vs. a reduced rate for a 3-year savings plan of ~\$1,703.44/month. Based on Azure pricing as of October 2022. Prices subject to change. Actual savings may vary based on location, instance type, or usage.

Optimize savings automatically

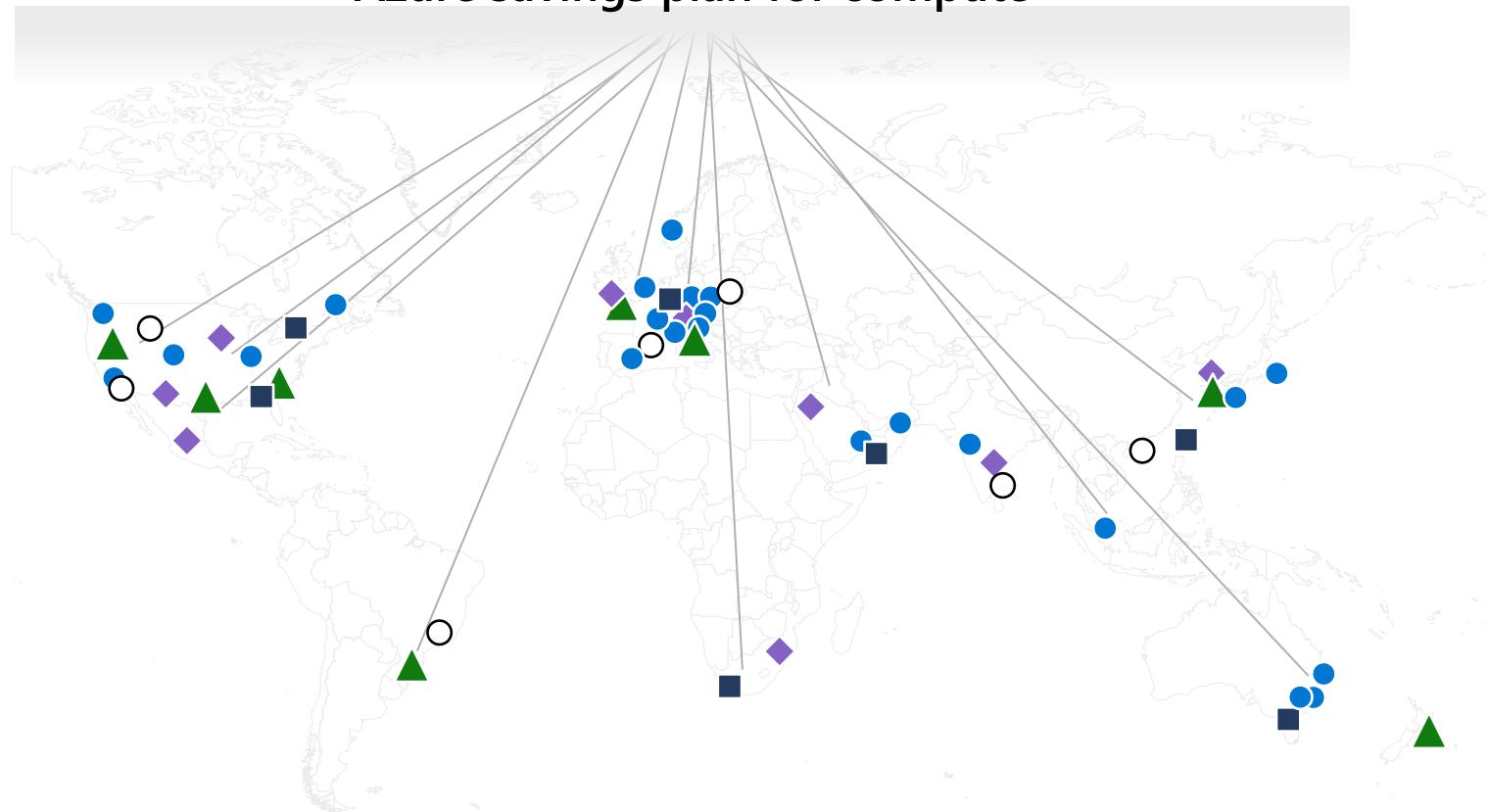


Compute usage across the world is covered by the plan at reduced prices, helping you get more value from your cloud investment

- Save on compute usage regardless of region, instance series, or operating system
- Biggest savings are automatically applied first, allowing you get the best value from your hourly commitment
- Modernize workloads and continue saving as needs change over time

For illustrative purposes only. Refer to the Azure geographies page for global availability.

Azure savings plan for compute



Compute products and services covered by the plan:

- | | | |
|-----------------------------|--------------------------------|-----------------------|
| ● Azure Virtual Machines* | ▲ Azure Functions Premium Plan | ◆ Azure App Service** |
| ■ Azure Container Instances | ○ Azure Dedicated Host | ◆ Azure Spring App |

*Does not include BareMetal Infrastructure, A, G, and GS series.

**App Service includes only upgraded premium and isolated services (Premium v3 and Isolated v2)

Save on your terms



Quick and easy to purchase with flexible plan options to fit customers' needs

- 1 Save on compute usage by choosing a 1- or 3-year term
- 2 Get help setting the optimal hourly commitment amount with personalized recommendations based on your recent usage
- 3 Enjoy flexible payment options—pay all upfront or monthly at no extra cost
- 4 Streamline savings according to budget needs—scope plan to a subscription, resource group, management group or entire account

Microsoft Azure Search resources, services, and docs (G+/-)

Home > Cost Management + Billing > Contoso Billing Profile > Add a plan

Basics Review + buy

Savings plan helps you save money on Azure products and services but with additional flexibility. By committing to a consistent amount of usage for 1 or 3 year terms, you receive significant savings on compute resource as you use them.

Name * ContosoSubscription

Billing subscription * ContosoSubscription

Term length * 1 year 3 years

Hourly commitment in USD * 5.00

Billing frequency * Monthly All upfront

Apply to any eligible resource * Shared across the subscription's billing scope (Contoso Billing Profile)

Cost summary
USD 3,650.00/mo
USD 43,800.00 total
See details

Next: Review + buy

Example presented for illustrated purposes only

Cost saving options for different compute usage needs and patterns



Azure savings plan for compute

Most flexible savings for dynamic workloads while accommodating for planned or unplanned changes



Reserved Instances

Greatest cost savings for stable, predictable workloads with no planned changes

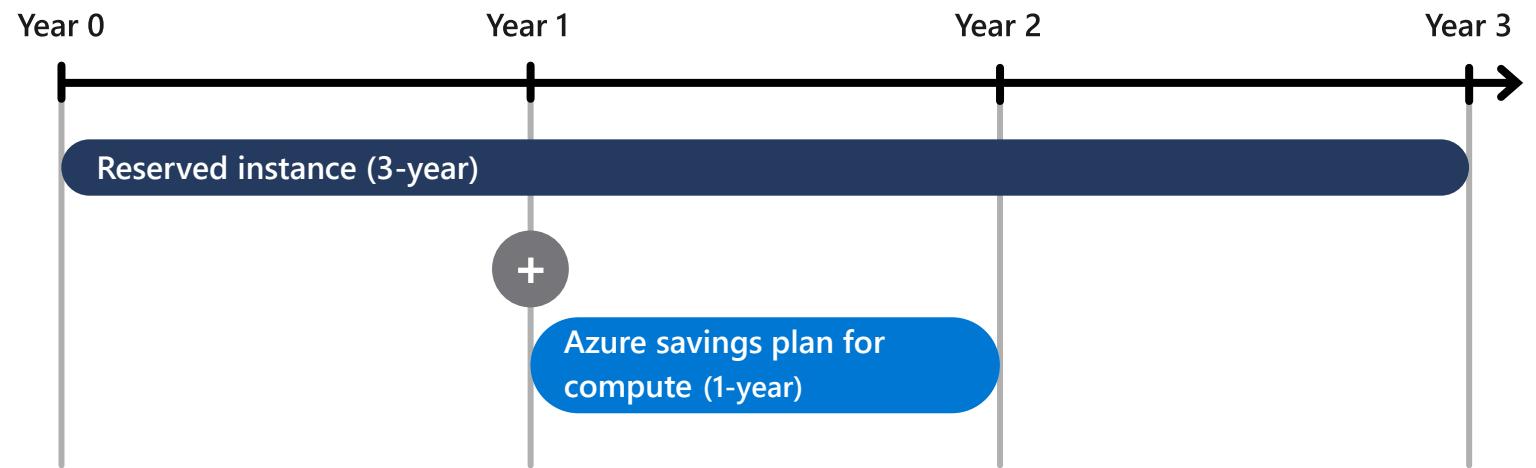
Savings compared to pay-as-you-go	Save up to 65%	Save up to 72%*
Commitment type	Spend a fixed hourly dollar amount on compute services collectively (e.g. Spend \$5/hour on compute services for 1 year)	Usage of a specific virtual machine type in a particular Azure region (e.g. D2v4 virtual machine in Japan East for 1 year)
Savings apply	Across select services globally, up to the hourly commitment	Directly to the identified compute service in a particular region
Term	1 or 3 year	1 or 3 year
Payment options	Upfront or monthly	Upfront or monthly
Cancellation	No cancellations	Up to \$50,000 USD

*The 72 percent saving is based on one M32ts Azure VM for SUSE Linux Enterprise + 24x7 Support OS in the West US 2 region running for 36 months at a pay-as-you-go rate of ~\$1,976.11/month; reduced rate for a 3-year reserved instance of ~\$552.85/month. Azure pricing as of February 22, 2022. Prices subject to change. Actual savings may vary based on location, instance type, or usage.

Customers may have both Azure savings plan for compute and Reserved Instances

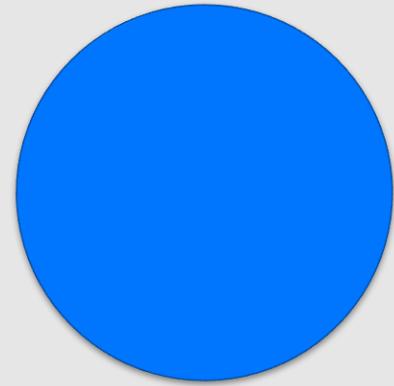
We automatically maximize customer benefit and savings across eligible usage each hour

- When usage can be covered by either Reserved Instances or Azure savings plans for compute, reserved instances are used first, as they provide greater savings and have a more targeted scope
- Azure savings plan for compute will apply to the remaining eligible usage until the commitment is fully consumed
- Once a Reserved Instance or Azure saving plan for compute is fully consumed or expired, you will then be billed on a pay-as-you-go basis



Each term is unique and based on date of purchase

Purchase Azure Reserved Instances for consistent usage



Significant cost savings
up to 72% over pay-as-you-go
models



Budget predictability
and **prioritized** compute
capacity



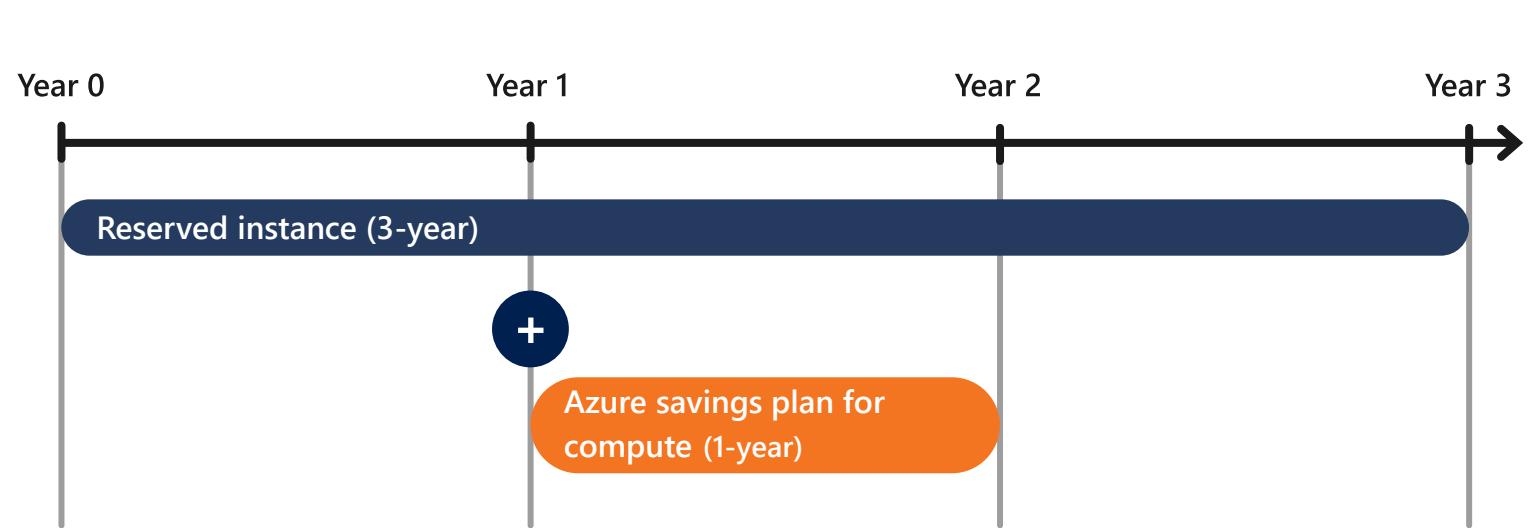
Flexibility
to modify reservations
and simplicity of purchase

- Reserve virtual machine capacity in advance
- Select 1- or 3-year terms with significant benefits
- Reusable across instances in the same family and region
- Available for VMs, SQL Database, Cosmos DB, and SUSE Enterprise Linux

Customers may have both Azure savings plan for compute and Reserved Instances

We automatically maximize customer benefit and savings across eligible usage each hour

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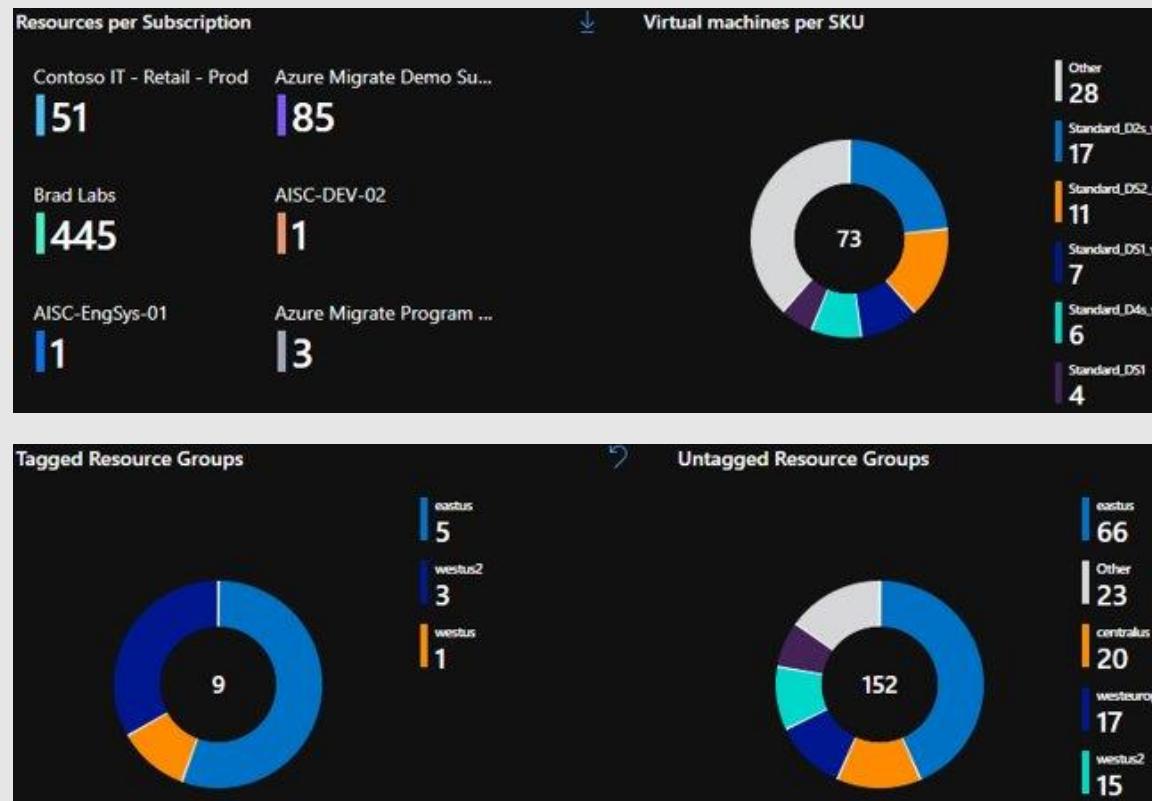
Each term is unique and based on date of purchase



<https://detective.kusto.io/>

Well-Architected Cost Optimization Azure Monitor Workbook

An Azure Monitor Workbook will be deployed. It helps identify waste and resources optimization opportunities that will enable you to maximize the efficiency of your cloud spend.



Customize your own copy of the workbook

Deploy the workbook to Azure

If you want to make modifications to the original workbook, its template is offered as part of the [FinOps toolkit](#) and can be deployed in just a few steps. Confirm that you have the following least-privileged roles to deploy and use the workbook.

- [Workbook Contributor](#) - allows you to import, save, and deploy the workbook.
- [Reader](#) allows you to view all the workbook tabs without saving.

Deploy the Cost Optimization workbook template with one of the following options.

[Deploy to Azure](#)

[Deploy to Azure Government](#)

Learn more: [Use and customize the Cost optimization workbook - Microsoft Cost Management | Microsoft Learn](#)

The screenshot shows two views of the 'Advisor | Workbooks | Cost Optimization (Preview)' page. The top view is the main 'Welcome to the cost optimization workbook' page, which includes an 'Overview' section, a 'Prerequisites' section (listing 'Reader' and 'Workbook Cont.' roles), and a 'Feedback' section. The bottom view is a detailed 'Azure Hybrid Benefit Overview' section, which discusses the benefit for Windows Server licenses and provides a summary table of Windows VMs categorized by priority based on core count.

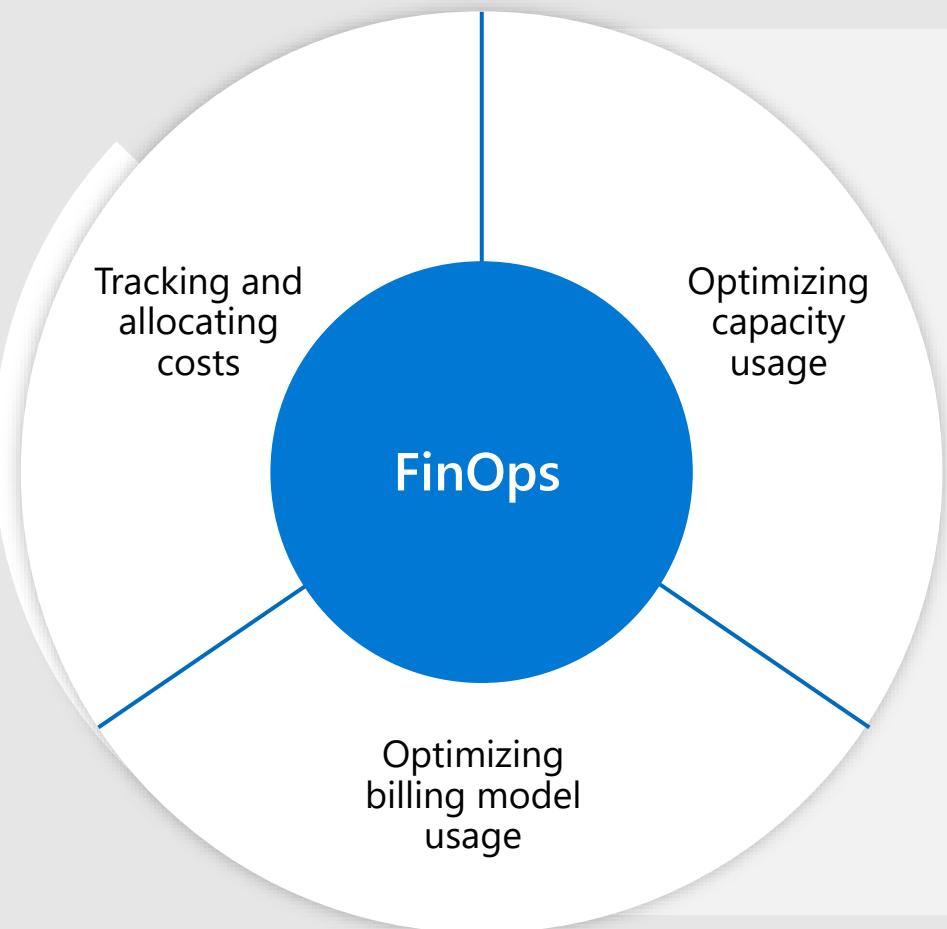
Subscription Name	Is AHUB enabled?	Number of resources
Contoso Hotels Tenant - Production	AHUB Not Enabled	9
Contoso Hotels Tenant - Production	AHUB Enabled	12
CyberSecSOC	AHUB Enabled	42
CyberSecSOC	AHUB Not Enabled	102

A circular progress bar at the bottom right indicates 165 AHUB Not Enabled and 54 AHUB Enabled resources.



FinOps is a framework that accelerates business value

Operating models for Technical and Financial leadership: Share the same language and processes to **monitor cloud spend and maximize the value** of cloud adoption



FinOps Operating model



Inform

Transparency in creating shared accountability by showing teams what they are spending and why



Optimize

Identify and measure efficiencies within optimization, accelerating the value of services consumed



Operate

Definition of the processes that enable the technical, financial and business unit goals

FinOps Stakeholder Responsibility

Goal: Make cloud data ***visible, transparent, and actionable*** to entire organization to drive financial accountability and accelerate cloud business value realization

FinOps Teams	Responsibility	Actions
Engineering	<ul style="list-style-type: none">▪ Map and track cloud spend▪ Identify units to be tracked▪ Define a management & governance▪ Set tagging strategy & compliance▪ Lead FinOps Initiative	<ul style="list-style-type: none">▪ Lead charge of FinOps Initiative▪ Drive accountability for cloud spend▪ Identify FinOps team stakeholders▪ Analyze and track usage across environment and subscriptions
Finance	<ul style="list-style-type: none">▪ Define budgets and forecast▪ Trending & variance analysis▪ Direct Chargebacks▪ Reservation and Commitment usage monitoring and alerting in place	<ul style="list-style-type: none">▪ Analyze details on where cloud spend is deriving from and supply any financial outcomes that can be attributed to those cloud solutions
Business	<ul style="list-style-type: none">▪ Set KPIs and budgets throughout organization▪ Create benchmark scorecards▪ Build a FinOps team▪ Aligning organization on FinOps▪ Shift in Culture of Financial Accountability	<ul style="list-style-type: none">▪ Gather team of Business leaders to better understand of how they use cloud solutions to drive business value▪ Business ownership will also help you communicate any new requirements downstream.

FinOps Toolkit/hub

Open, extensible, and scalable cost governance for the enterprise.

•Be the standard

Strive to be the principal embodiment of the FinOps Framework.

•Built for scale

Designed to support the largest accounts and organizations.

•Open and extensible

Embrace the ecosystem and prioritize enabling the platform.

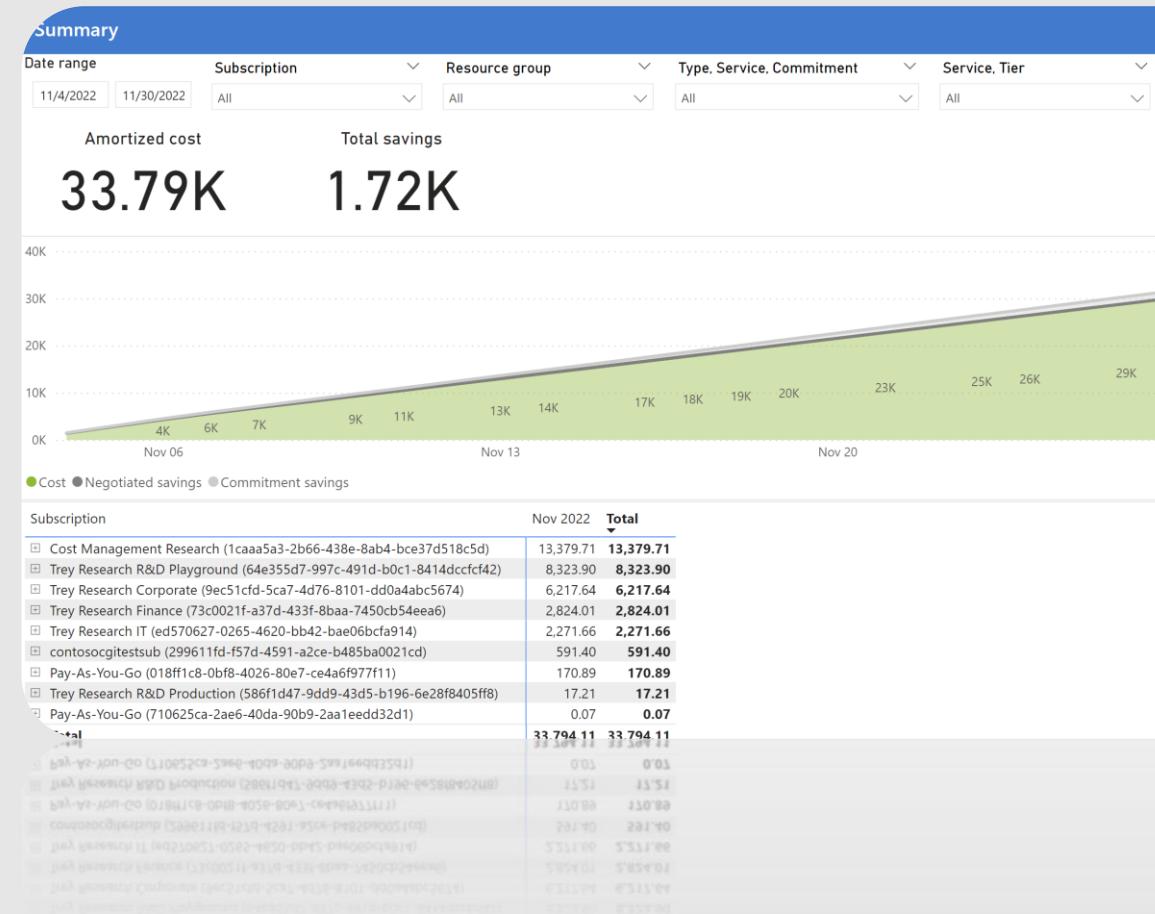
ESTIMATED COST: \$25 PER \$1M IN COST

Exact cost of the solution may vary. Cost is primarily for data storage and number of times data is ingested. Pipelines will run once a day per export.

PowerBI TEMPLATES READY TO USE

- Cost Summary
- Commitment discounts
- FOCUS
- Cost Management EA template*

* The EA template app is the PBIX version of the “Cost Management app” in Microsoft AppSource



<https://microsoft.github.io/finops-toolkit/hubs>

There are two groups of free services

Certain types of these services are free up to a monthly amount.



Popular services are free for your first 12 months

Get monthly free amounts of these services for 12 months from the date you create your Azure account.*



55+ other services are free always

Keep getting monthly free amounts of these services for as long as you have an Azure account.

[Free Azure Services](#)

Azure SQL Managed Instance for free

- A General Purpose instance with up to 100 databases
- 720 vCore hours of compute every month
- 64 GB of storage

Prerequisites:

- An Azure account with one of the following Azure subscriptions:
- Pay-as-you-go (003P)
- Azure in CSP (0145P)

Estimated costs per month	
Compute	\$0.00
Cost per VCore GeneralPurpose - Gen5	\$0.00
720 vCore hours free/month	disabled
Storage	\$0.00
Cost per GB (in USD)	\$0.00
Max storage selected (in GB) Data max size + log storage	64
64 GB storage free	disabled
Storage overflow billing	disabled
Estimated total	Free¹
Prices reflect an estimate only. View Azure pricing calculator. Final charges will appear in your local currency in cost analysis and billing views. Learn more	
1There will be no charges for usage within the free limits. The database will be paused automatically when the free limits are reached.	

Disclaimer

Try [Azure SQL Managed Instance](#) free of charge for the first 12 months to get

Azure Cosmos DB for MongoDB vCore for free

Cluster details

Cluster name * ⓘ mongo-vcore-freetier

Free tier ⓘ

Location * ⓘ (Asia Pacific) Southeast Asia

Cluster tier * ⓘ **1 shard, no high availability (HA)**
Free tier, 0.00 USD / month

MongoDB version ⓘ 6.0

- Zero cost
- Effortless onboarding
- Generous storage (32-GB)
- Seamless upgrade path

Disclaimer

Try [Azure Cosmos DB for free here](#) for a lifetime of your subscription!

Azure SQL Database for free (preview)

- Free limits include 100,000 vCore seconds of [serverless database](#)
- Effortless onboarding
- Generous storage (32-GB)
- Auto-pause the database until next month
 - Continue using database for additional charges

Prerequisites:

- Regardless of your Azure subscription type.
- An Azure subscription that doesn't already have a SQL Database with the free offer applied.
 - There's a limit of one free amount database per subscription.

[Disclaimer](#)


Cost summary
General Purpose (GP_S_Gen5_2)
Cost per GB (in USD) 0.00
Max storage selected (in GB) x 41.6
First 32 GB storage free
First 100,000 vCore seconds free
Overage billing ¹ Disabled
ESTIMATED STORAGE COST / MONTH 0.00 USD
COMPUTE COST / VCORE SECOND ² 0.000000 USD
<small>¹ There will be no charges for usage within the free limits. The database will be paused automatically when the free limits are reached.</small>
<small>² Serverless databases are billed in vCore seconds based on a combination of CPU and memory utilization. Learn more about serverless billing</small>

Try [Azure SQL Database for free here](#) for a lifetime of your subscription!

Free Hosting Plan for WordPress on App Service (Preview)

Hosting Plan	WebApp Server	Database Server
Free	F1 Free Tier (60 CPU minutes per day, 1 GB RAM, 1 GB Storage)	Burstable, B1ms Free trial (1 vCores, 2 GB RAM, 32 GB storage, 396 IOPS)

Where to go for more information

Azure Cost Management product page

<https://azure.microsoft.com/services/cost-management/>

Azure Cost Management documentation

<https://docs.microsoft.com/azure/cost-management/>

Azure Cost Management API reference

<https://docs.microsoft.com/rest/api/cost-management/>

FastTrack for Azure (deployment guidance)

<https://azure.microsoft.com/programs/azure-fasttrack/>

Twitter @AzureCostMgmt

