SQL KONFERENZ 2025



FinOps in Azure mit BI-Vorgehen die Kosten Optimieren zum Bedarf

Patrick Heyde

Microsoft

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Operational framework and cultural practice

FinOps is an **operational framework and cultural practice** that aims to **maximize the business value of cloud**, enable **timely data-driven decision making**, and create **financial accountability through collaboration between engineering, finance, and business teams**. It brings technology, finance, and business together to drive financial accountability and accelerate business value realization through cloud transformation. finops.org +1



FinOps

Finance & Operations

Meine Erfahrungen von FinOps und Optimierungen

- Re-Design der Technologiewahl
  - 1.000 €/Monat -> 10 €/Monat

- Easy Quick-Win
  - In >10 Click 30.000 €/Monat eingespart
  - German Kultur -> 3-12 Monate benötigt um alle Entscheider abzuholen und alignen

- Unternehmen Robust für die Zukunft aufstellen
  - In der aktuellen Zeit hat das Unternehmen 80+ IT & Dev. Mitarbeiter reduziert mit einer Ausnahme, das Infra Team. Ursache: in den letzten 18 Monate wurde eine Starke Effizienzsteigerung im Unternehmen erreicht:
    - Eine Bereits vorhandene Azure Workload von 70k/m auf 20k/m optimiert
    - Lokalen Systeme bei der Erneuerung auf Azure PaaS Dienste Modernisiert ca. 1,5m/y Einsparung (von Outsourcing zum Inhousing auf PaaS-Dienste)



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Azure Cost Management



Cost Management auf Basis der Azure Rechnung...

Rechnung

Wir berechnen Ihnen f

Menge	Beschreibung	VK-Preis	Betrag
	Leistungszeitraum:		
1 X	Azure Consumption	10,24	10,24
		Zwischensumme	**10,24**
		MwSt.-Betrag 19%	1,95
		samt (EUR)	**12,19**

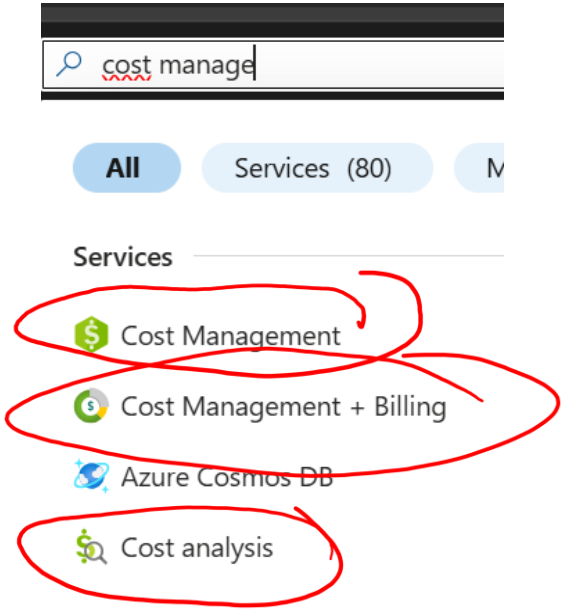
Ihre Leistung wurde erbracht am 30.11.202

Zahlungsbedingungen: 8 Tage



FinOps mit Mittel aus Operation – Verbrauchsanalyse bevor eine Rechnung erstellt wird

- Portal.azure.com





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Gruppieren nach Service Name oder TAGs oder RessourceGroup Name



Feb 2025 | Add filter

ACTUAL COST (EUR ONLY) €793.82 | FORECAST: CHART VIEW OFF -- | BUDGET: NONE --

Group by: Service name | Granularity: None | Table

Pin to dashboard

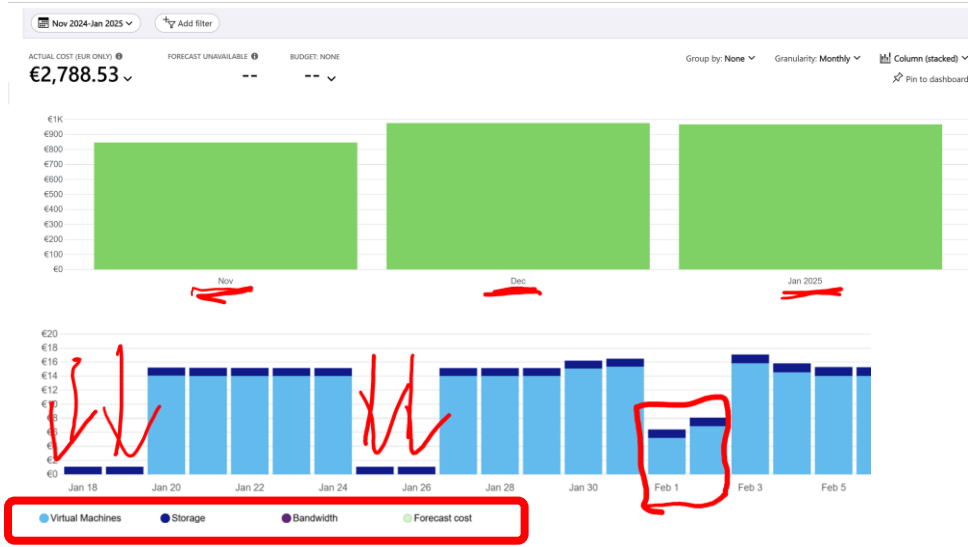
Filter items | 10 rows

Service name	Cost
Virtual Machines	€394.70
Storage	€178.03
Virtual Machines Licenses	€131.18
Microsoft Entra Domain Services	€53.82
VPN Gateway	€20.07
Load Balancer	€9.07
Virtual Network	€3.81

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Wie hoch sind meine Kosten?

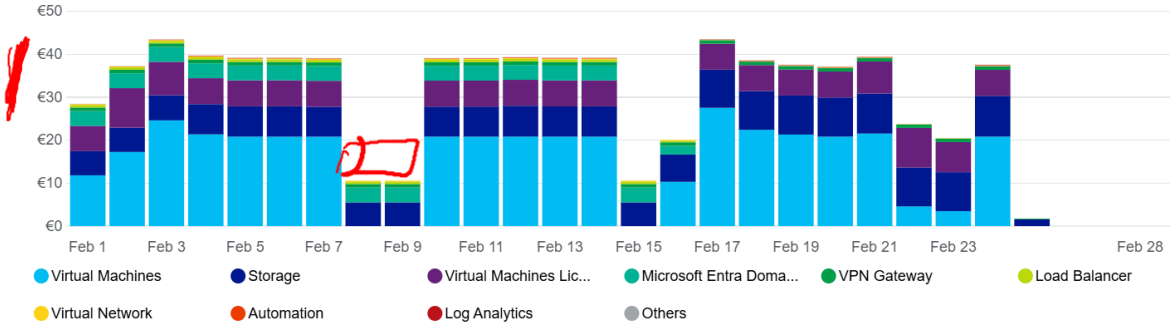
- Pro Monat
- Pro Tag





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Gruppieren nach Service Name oder TAGs oder RessourceGroup Name

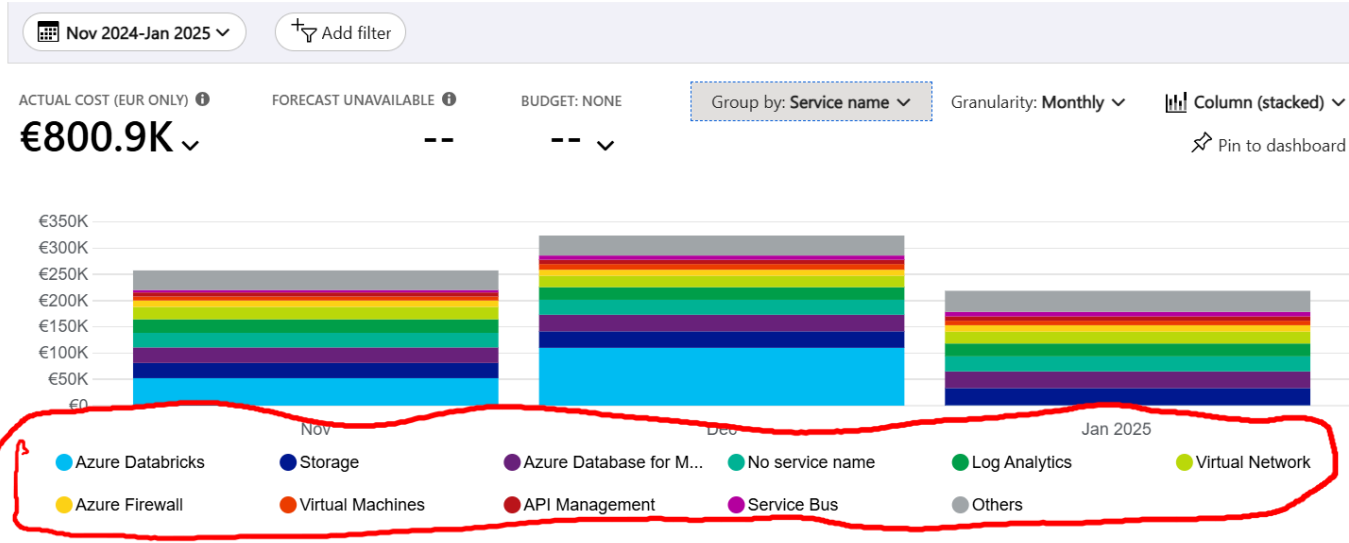




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Und das funktioniert auch bei großen Organisationen





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Was für Kostenarten gibt es?

- Statische & Dynamische
  - Pro Jahr/Monat/Tag/Stunde
- Wie sieht es bei Compute aus?
- Wie sieht es bei Lizenzen aus?
- Wie sieht es bei Storage aus?
- Wie sieht es bei Netzwerk aus?

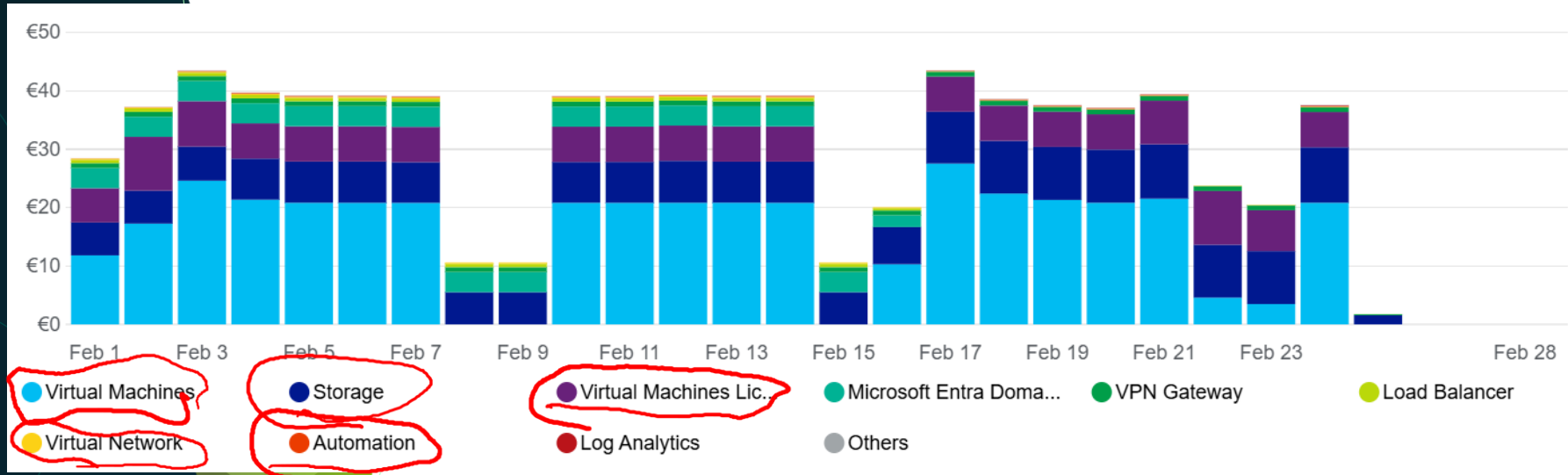
statisch	dynamisch	As I design it
statisch	dynamisch	As I design it
statisch	dynamisch	As I design it
statisch	dynamisch	As I design it

Traditionell
und meistens
inplace



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Ein genauer Blick bitte – Was ist hier statisch und was dynamisch?



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Azure Advisor

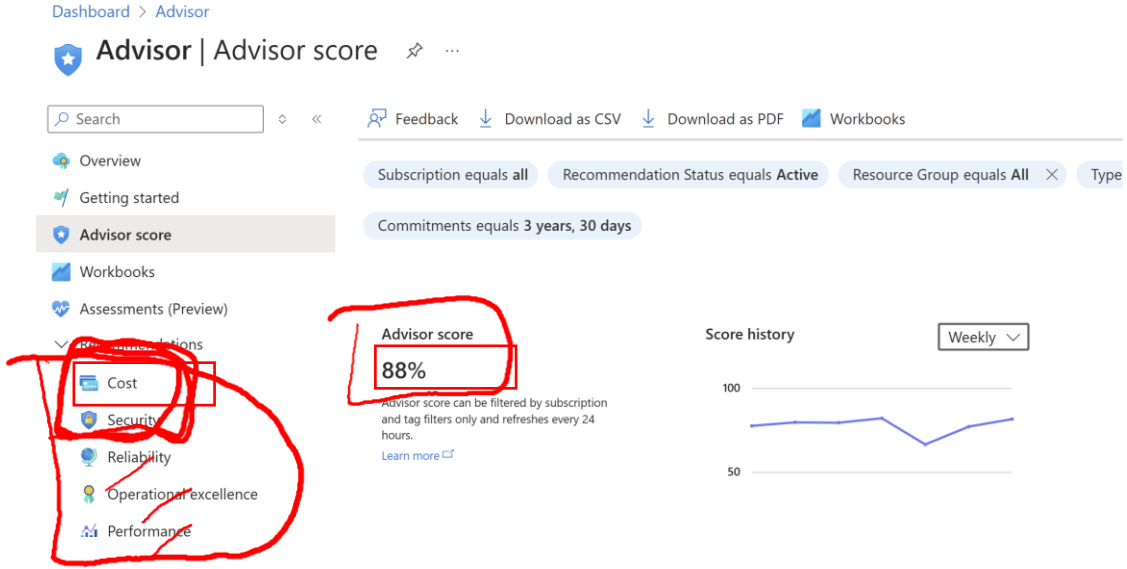
Kosteneffizienz

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Target 95+%

Cost Advisor Score im Azure Portal

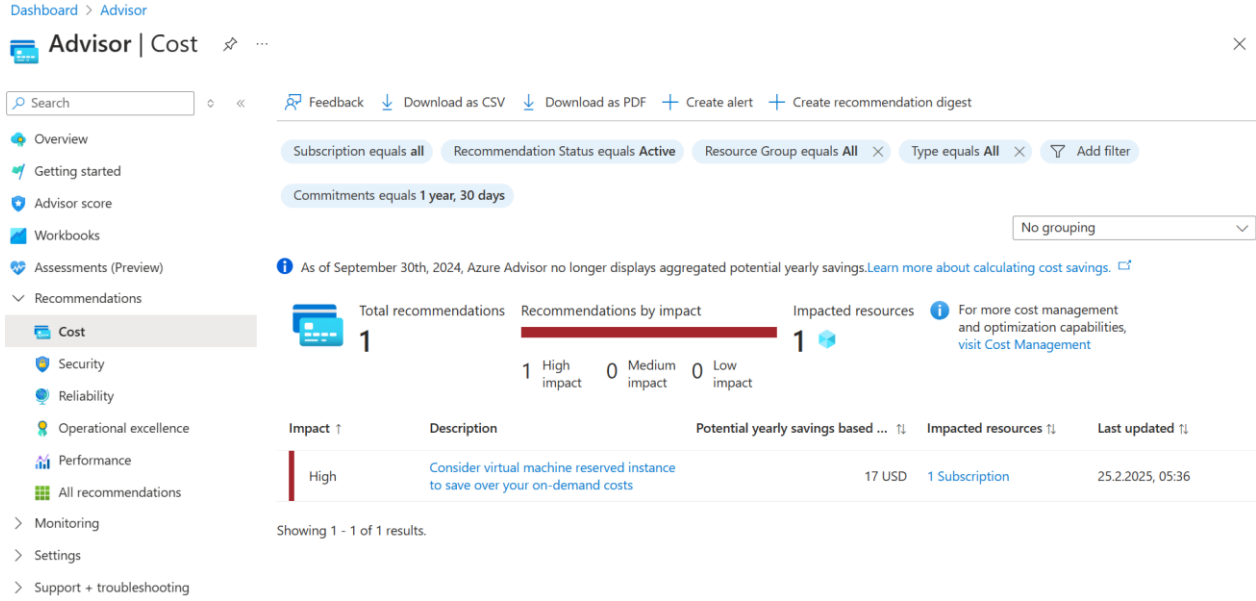




SQL KONFERENZ 2025

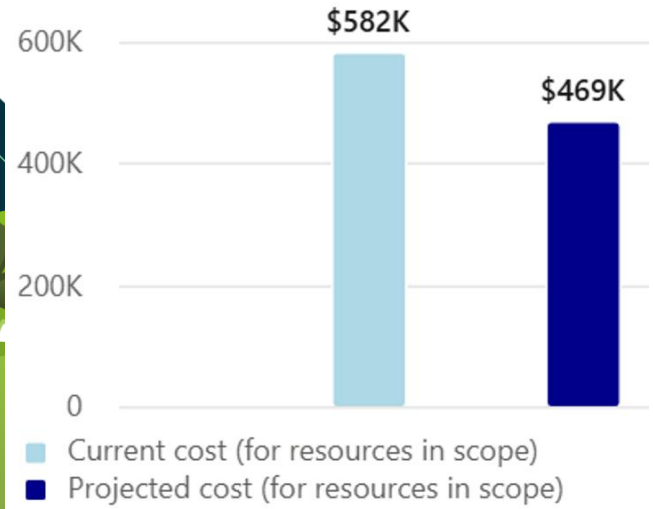
Advisor arbeitet dauerhaft und zeigt jede Verbesserung an

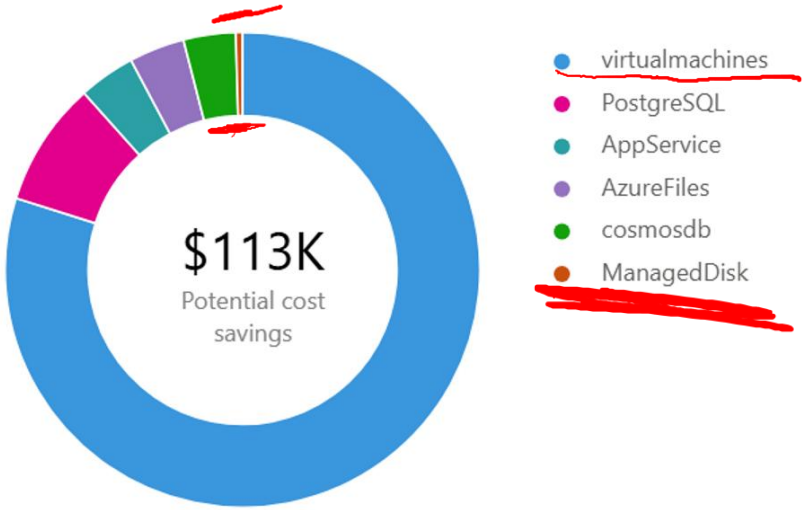




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Wenn Kein FinOps inplace oder „wait and do nothing“

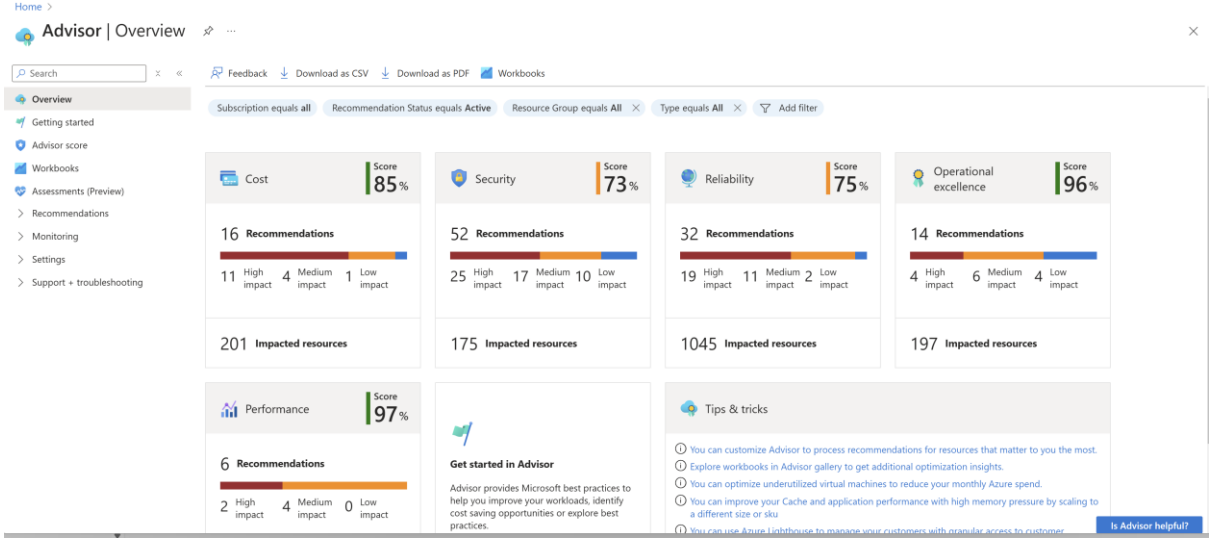




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Cost Advisor Score im Portal





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Samples of Advisor Score – Good or Bad?

Score 95%
Industry average 68%

Score 85%
Industry average 77%

Score 73%
Industry average 77%

Score 68%
Industry average 65%

Score 42%
Industry average 63%

Score 63%
Industry average 68%

Score 48%
Industry average 63%

Score 46%
Industry average 68%



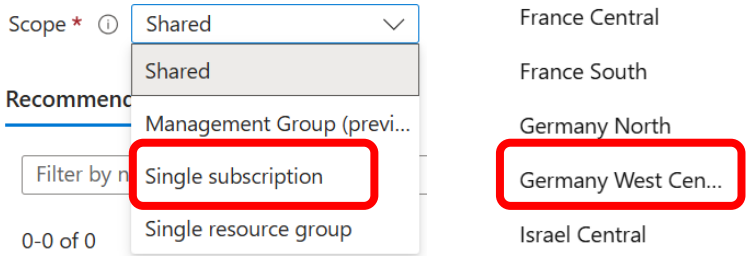
Wichtige Optimierungen

- Folge den Azure Advisor Empfehlungen
  - Reservierungen
  - Compute Saving Plan
  - Pre-Purchase Plan -> Defender / Sentinel – Pre-Purchase Plan
  - Storage Life Cycle
  - Log Analytics
    - Daily Commitment vs. Dedicated cluster + Commitment
- Lizenzbezug
  - SPLA, EA, MPSA, Azure, Azure Marketplace, CSP, …
- Re-think the whole Process?
- Automate FinOps
  - By your own or 3rd party tools



Reservierungen

- Reservation bindet 3 Elemente:
  - Scope + Region + SKU (Bsp: Standard D8s v3)

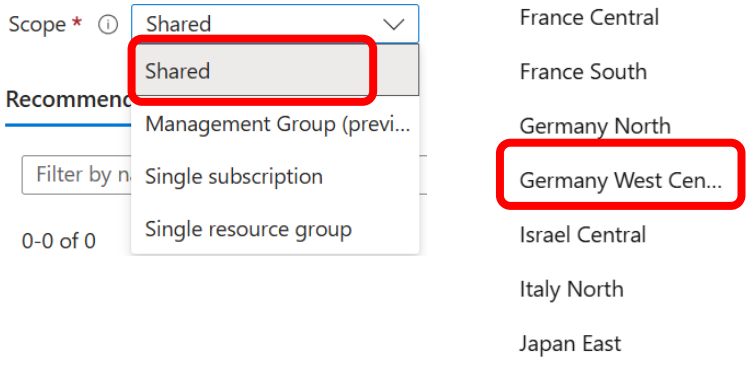


VM Size	Type	vCPUs	RAM (GiB)
Most used by Azure users	The most used sizes by users in Azure		
B4ms	General purpose	4	16
D4s_v3	General purpose	4	16
[illegible]	General purpose	4	14
D8s_v3	General purpose	8	32
D-Series v6	The latest generation D family sizes recommended for		
D4ads_v6	General purpose	4	16
D4alds_v6	General purpose	4	8
D4als_v6	General purpose	4	8
D4as_v6	General purpose	4	16

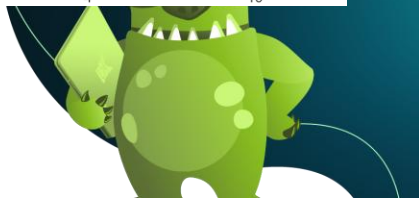


Reservierungen Shared

- Reservation bindet 3 Elemente:
  - Scope + Region + SKU (Bsp: Standard D4s v3)

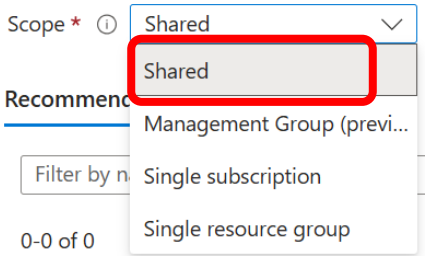


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D4alds_v6	General purpose	4	8
D4als_v6	General purpose	4	8
D4as_v6	General purpose	4	16



Compute Saving Plan

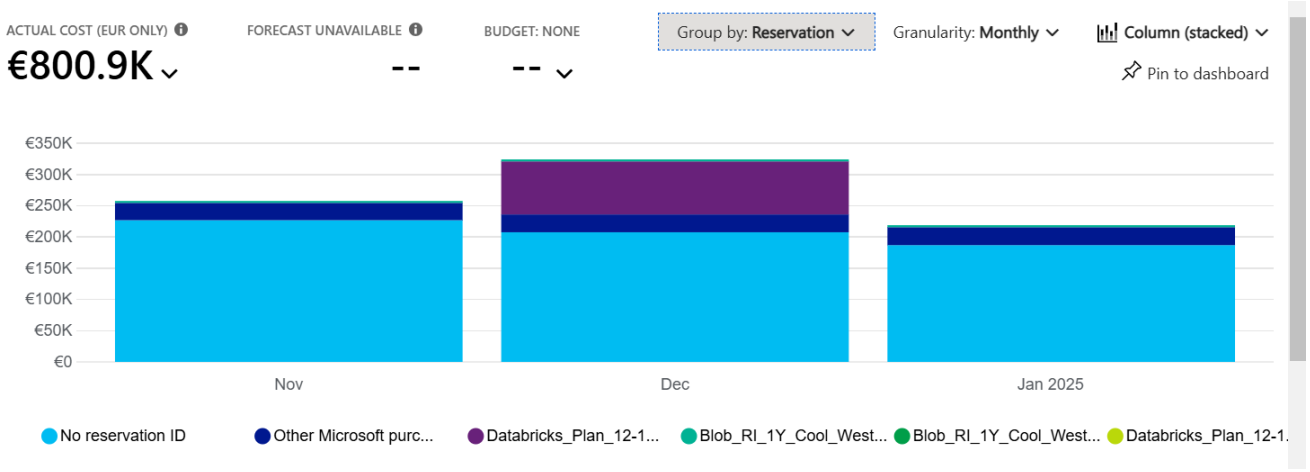
- Einfache zu Verwalten und besteht aus
  - Commitment per Hour
  - Scope:



- Wirkung: Compute Services usage über alle Regions
- Very easy to Implement >10 clicks

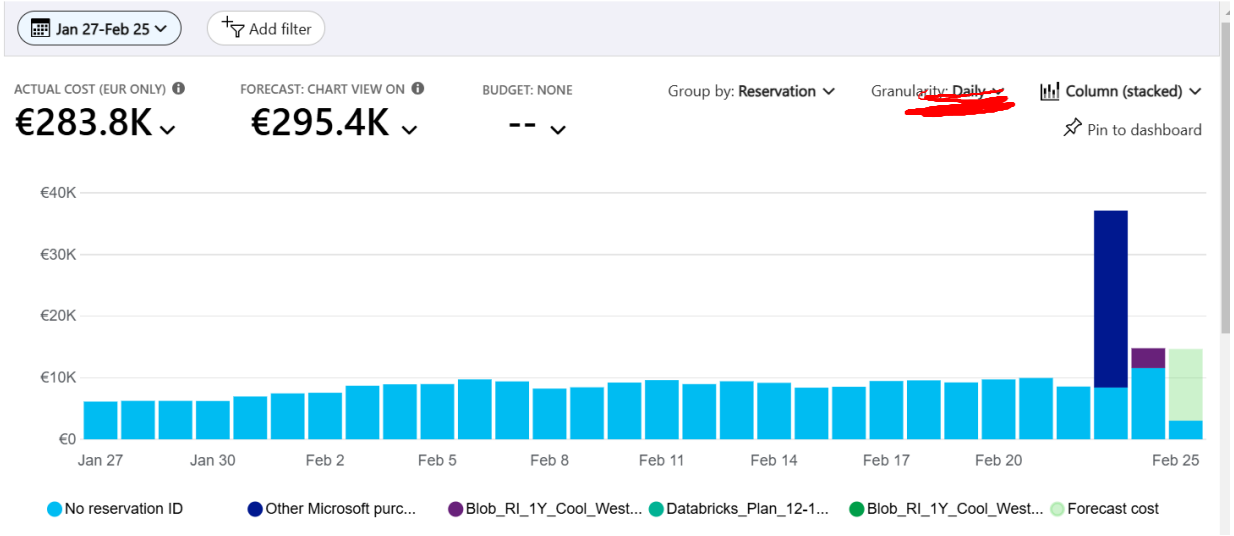


Reservations/ComputeSavingplan im Cost Management View





Reservations & SP im Cost Management View daily





Compute Saving Plan – Result of an Analysis

- Current cost: 120k/m, Saving: 374k/3y -> 10,39k/m



Potential cost savings
$374K

Savings plan type	Term	Currency	Commitment/hour	Net savings	Expected coverage
Compute_Savings_Plan	P3Y	USD	$25.98	$374K	64%



Pre-Purchasing Plans

- Defender, Sentinel, Databricks, SoftwarePlans

- Virtual machine
- Azure Blob Storage
- Azure Managed Disks
- SUSE Linux
- Azure Files Reserved Capacity
- Azure SQL Edge
- JBoss EAP Integrated Support (App Service)
- Microsoft Defender for Cloud Pre-Purchase Plan
- SQL Database and SQL Managed Instance
- Azure Dedicated Host
- Azure Databricks Pre-Purchase Plan
- Azure Red Hat OpenShift
- Data Factory
- Azure Arc-enabled SQL Managed Instance
- Azure Backup
- Microsoft Sentinel Pre-Purchase Plan
- Azure Synapse Analytics (data warehousing only)
- Azure Database for MySQL
- Azure Cache for Redis
- App Services
- Azure NetApp Files
- Azure Synapse Analytics Pre-Purchase Plan
- Microsoft Fabric
- Azure Cosmos DB
- Azure Database for PostgreSQL
- Azure Data Explorer
- Azure VMware Solution
- Nutanix on Azure BareMetal
- Virtual Machine software reservation
- Azure OpenAI Service Provisioned

Storage Life Cycle Management

- Hot -> Cool -> Archive -> Delete
- Sample from 2023
  - 76 sql server backup nativly to azure blob storage
    - Onpremise Alternative Kosten: 7.000 €/M
    - And slower in performance im Vergleich zu Backup nach Azure
  - SQL Backup optimiert
    - 100% Hot -> 3.500 €/m
  - To
    - 10% (1 week windows) - Hot
    - 90% (6 weeks windows) – Cold
    - Total: 2.100 €/m
- https://learn.microsoft.com/de-de/azure/storage/blobs/lifecycle-management-overview

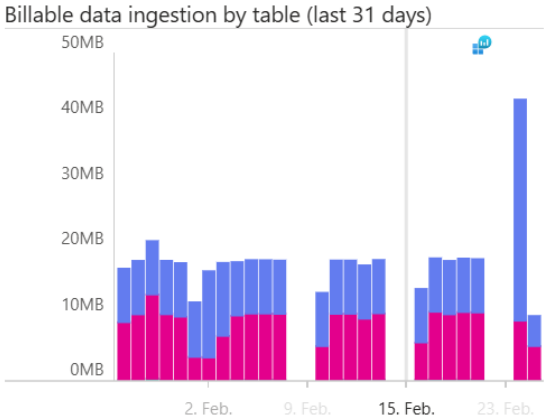


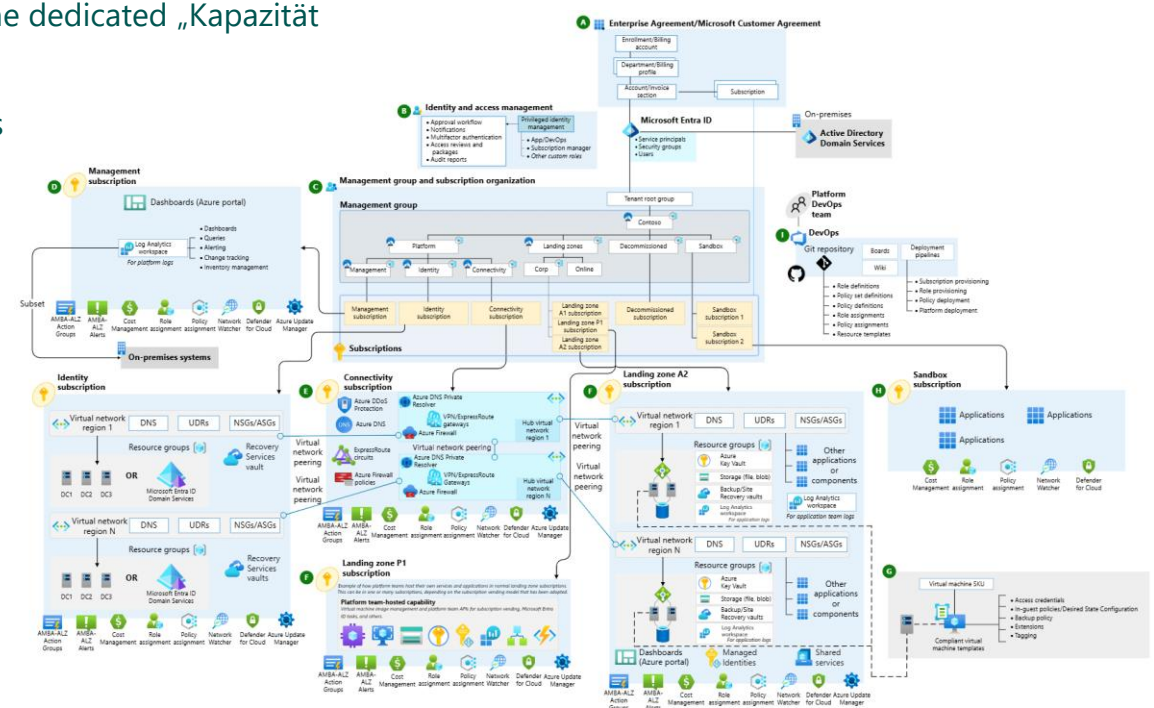
100 GB/day Commitment Tier
15% discount over Pay-as-you-go

200 GB/day Commitment Tier
20% discount over Pay-as-you-go

Log Analytics workspaces

- Verteilte Sturkturen und Fachbereiche vs. Eine dedicated „Kapazität
- Eine Folge vom Landingzone Konzept
  - Es entstehen ggf. viele Log Workspaces
  - Viele nur mit wenig Vol. Eingang





100 GB/day Commitment Tier
15% discount over Pay-as-you-go

200 GB/day Commitment Tier
20% discount over Pay-as-you-go

Log Analytics dedicated Workspace Cluster

- Verbindet die Kapazität von allen „Linked“ Log-Workspaces zu einem Large workspaces
- https://learn.microsoft.com/en-us/azure/azure-monitor/logs/logs-dedicated-clusters?tabs=azure-portal

Pricing Tiers

Pay-as-you-go
Per GB

The Pay-as-you-go pricing tier offers flexible consumption pricing in which you are charged per GB of data ingested. This only includes estimated costs from data ingestion to aid selecting the optimal pricing.

Estimated costs

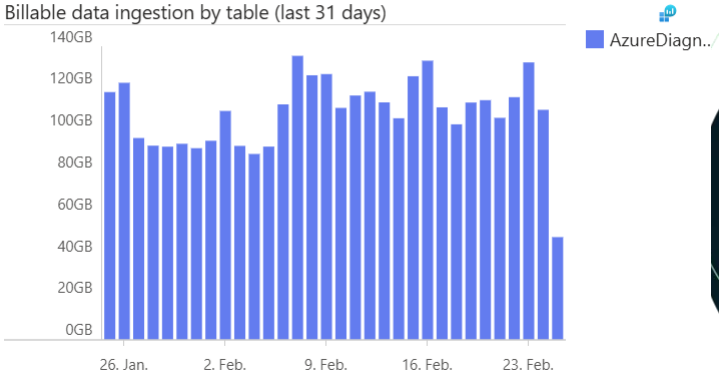
Item type	Price	Monthly usage (last 31 days)	Estimated monthly data ingestion cost
Analytics Logs data ingestion	2,99 $	3458.02 GB	10.339,49 $
Basic Logs data ingestion	0,65 $	0.00 GB	0,00 $
Total			**10.339,49 $**

This is the current pricing tier.

Select

100 GB/day Commitment Tier Recommended Tier
15% discount over Pay-as-you-go

Usage Charts





Re-thinkg – The Whole Process: Fokus on the Regions & Software Regeln & Lizenz Benefits

- Ergebnis einer GCP-Workload Auswertung -> Microsoft Software Runs best in Azure
  - GCP Rechnung all up: 13.500 € (Hardware + Lics)
    - 67 Win Server Lics: ~3.700 €/Monat
- Assessment Results mit Einsatz von Azure Hybrid Use Benefits

mit Lizenzkauf

Total cost		
France Central	Sweden Central	
7.623,54	7.207,27	€/Monat

Gesamt: **7.207,27 €/Monat**

- Compute: 2.826,73 €/Monat
- Storage: 3.296,01 €/Monat
- Lizenzen: 0 € - 1.084,53 €/Monat
  488 WS cores required

ohne Lizenzkauf

Total cost		
France Central	Sweden Central	
6.539,01	6.122,74	€/Monat

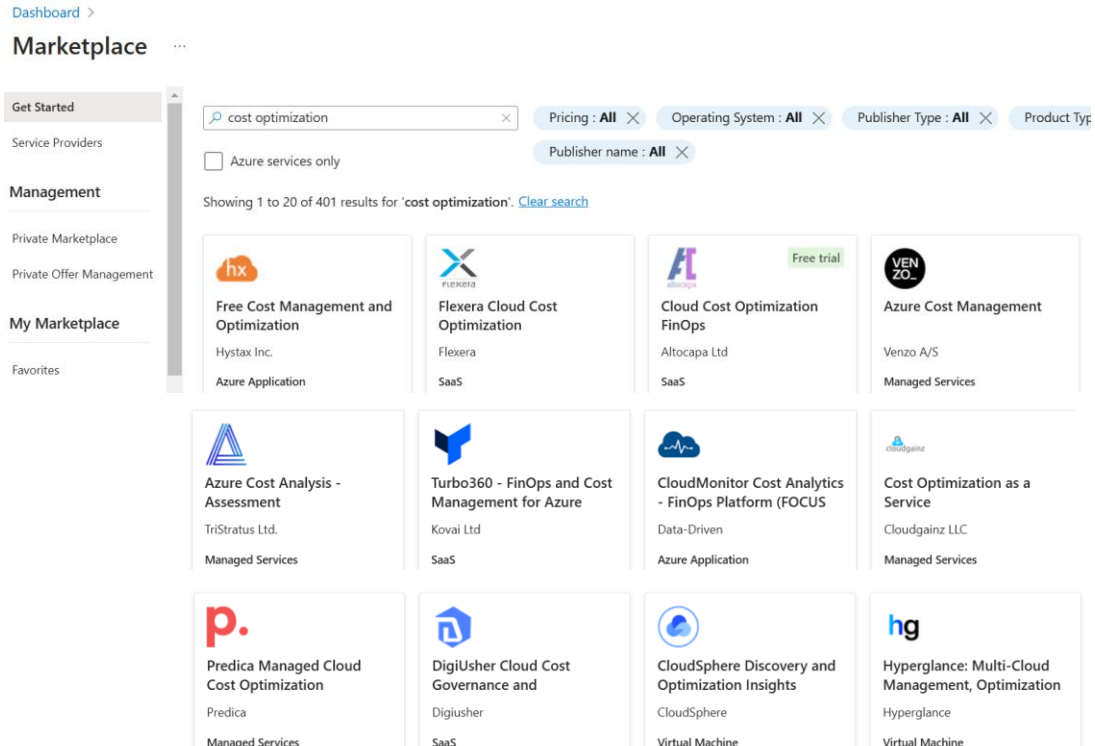
Gesamt: **7.623,54 €/Monat**

- Compute: 3.076,10 €/Monat
- Storage: 3.462,91
- Lizenzen: 0 € - 1.084,53 €/Monat,
  488 WS cores required



Automate FinOps

- 3rd Party





Automate FinOps

- Powershell
  https://www.powershellgallery.com/packages/Az.Advisor/1.1.2

  Get all recommendation

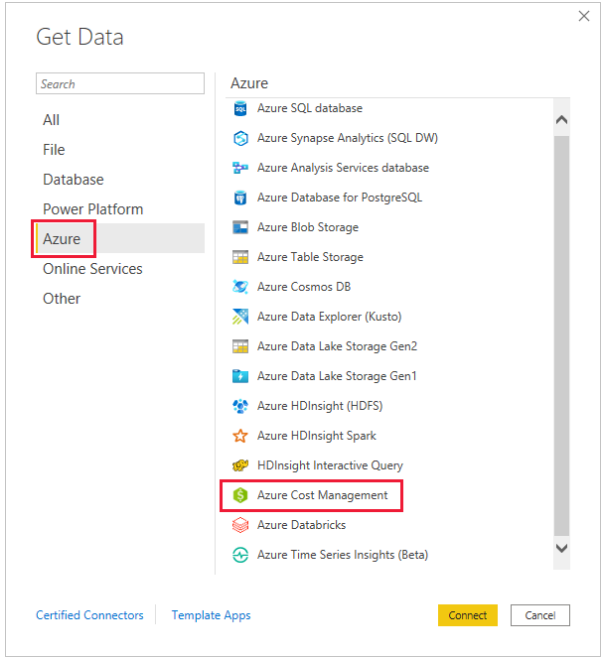
  Define a Process foreach Recommendation Type
    start a process to each Decision Maker per Recommendation

  Shared Decision Makers vs. Single Decision Maker?



PowerBI für Azure cost Management

- https://learn.microsoft.com/en-us/power-bi/connect-data/desktop-connect-azure-cost-management





Cost Management API - Tables

Table	Account Type	Supported Scopes	Description
Balance summary	EA only	EA Enrollment	Summary of the balance for the current billing month for Enterprise Agreements (EA).
Billing events	MCA only	Billing Profile	Event log of new invoices, credit purchases, etc. Microsoft Customer Agreement only.
Budgets	EA, MCA	EA Enrollment, MCA Billing Account, MCA Billing Profile	Budget details to view actual costs or usage against existing budget targets.
Charges	MCA only	MCA Billing Profile	A month-level summary of Azure usage, Marketplace charges, and charges billed separately. Microsoft Customer Agreement only.
Credit lots	MCA only	MCA Billing Profile	Azure credit lot purchase details for the provided billing profile. Microsoft Customer Agreement only.
Pricesheets	EA, MCA	EA Enrollment, MCA Billing Profile	Applicable meter rates for the provided billing profile or EA enrollment.
RI charges	EA, MCA	EA Enrollment, MCA Billing Profile	Charges associated to your Reserved Instances over the last 24 months. This table is in the process of being deprecated, use RI transactions instead
RI recommendations (shared)	EA, MCA	EA Enrollment, MCA Billing Profile	Reserved Instance purchase recommendations based on all your subscription usage trends for the last 30 days.
RI recommendations (single)	EA, MCA	EA Enrollment, MCA Billing Profile	Reserved Instance purchase recommendations based on your single subscription usage trends for the last 30 days.
RI transactions	EA, MCA	EA Enrollment, MCA Billing Profile	List of transactions for reserved instances on billing account scope.
RI usage details	EA, MCA	EA Enrollment, MCA Billing Profile	Consumption details for your existing Reserved Instances over the last month.
RI usage summary	EA, MCA	EA Enrollment, MCA Billing Profile	Daily Azure reservation usage percentage.
Usage details	EA, MCA	EA Enrollment, MCA Billing Account,MCA Billing Profile	A breakdown of consumed quantities and estimated charges for the given billing profile on EA enrollment.
Usage details amortized	EA, MCA	EA Enrollment, MCA Billing Account,MCA Billing Profile	A breakdown of consumed quantities and estimated amortized charges for the given billing profile on EA enrollment.

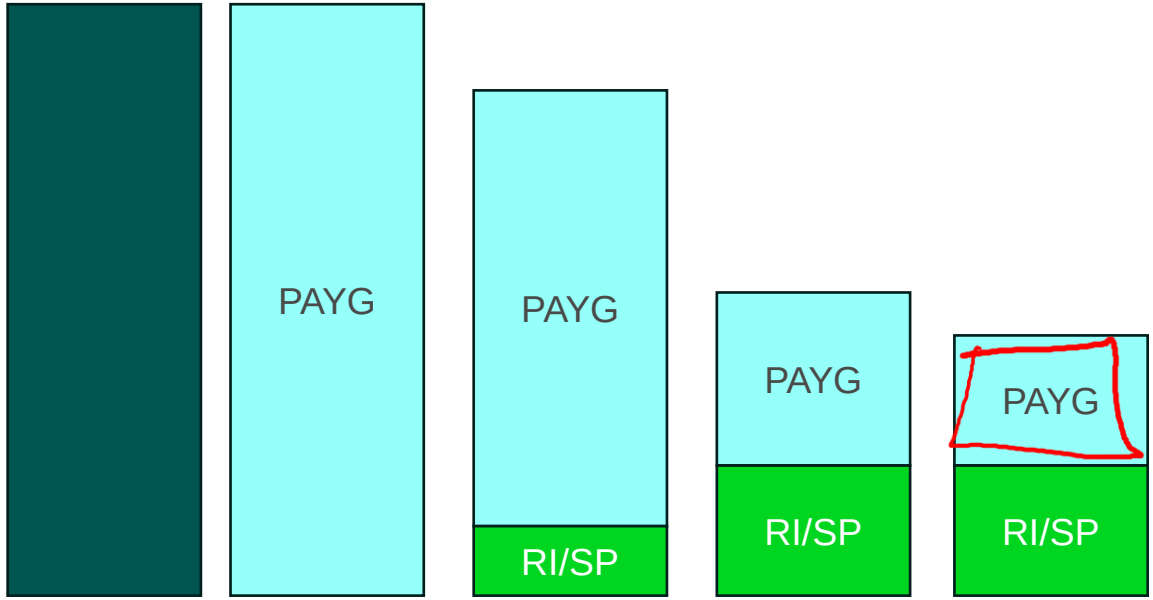


Looks in some samples in the past

- Real Life Data



Another View – consumption Types



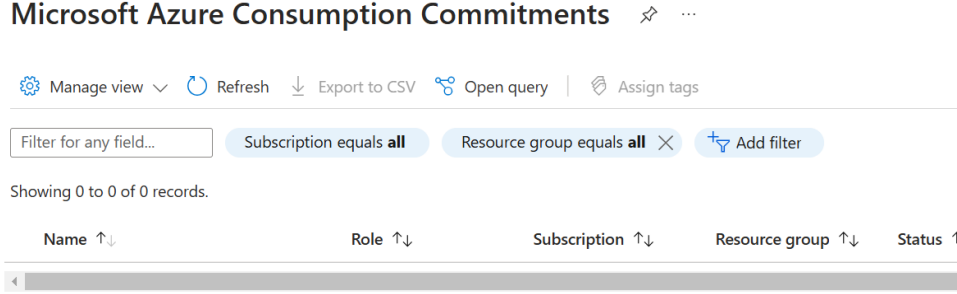
No FinOps inplace

Start with FinOps

continue with FinOps

Optimized Consumption

MACC Established





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Reference



- https://techcommunity.microsoft.com/blog/azurearchitectureblog/azure-cost-optimisation/3624817
- https://learn.microsoft.com/en-us/azure/well-architected/cost-optimization/
- https://learn.microsoft.com/en-us/azure/cost-management-billing/
- https://www.youtube.com/c/AzureCostManagement
- MACC + Services
  - https://learn.microsoft.com/en-us/marketplace/azure-consumption-commitment-benefit#determine-which-offers-are-eligible-for-azure-consumption-commitments-maccctc

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Cost Management Automation

- https://learn.microsoft.com/en-us/azure/cost-management-billing/automate/automation-overview#available-apis



Danke

Feedback



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