Cost Management

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- SRE Level 3
- Azure Fundamentals Certified
- Tech Stack: CI/CD, IaC, Linux, K8s, Cloud and Automation.

Important Notes

Identify yourself in Zoom, using your name and last name

Mute your microphone along the course unless you have questions

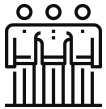
Raise the hand if you have questions during the session

Focus your questions on the presented topic

Turn off your camera in case of connection issues

Academy Code of Conduct

Be respectful, there are no bad questions or ideas.



Be welcoming and patient

Be careful in the words that you choose

Session Goal

At the end of this session, you will be able to:

- Be acquainted with the Azure Cost Management tool and its main features.
- Understand the benefits of Budgets creation
- Learn how to optimize your cost usage by planning well your spending.

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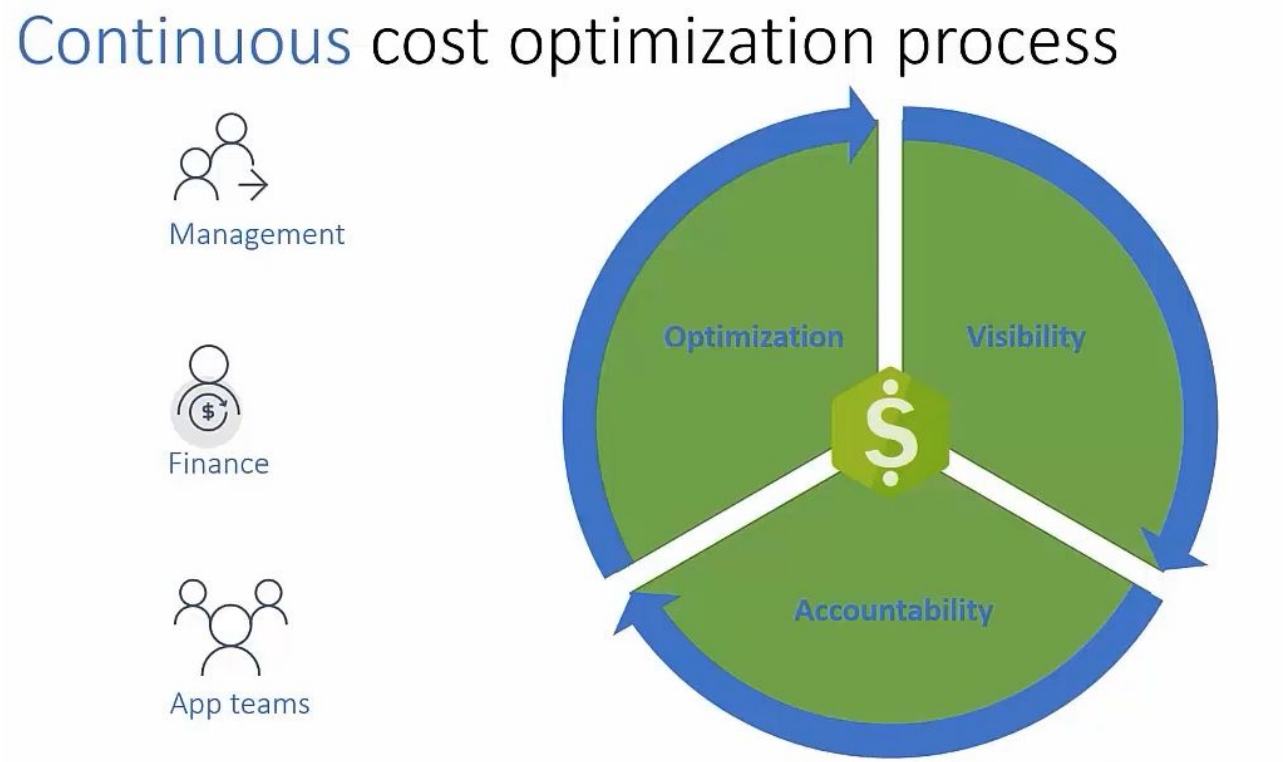
Review the different methods you can use to pay your invoices to Azure.

Cost Management is an ongoing process



Cost Management

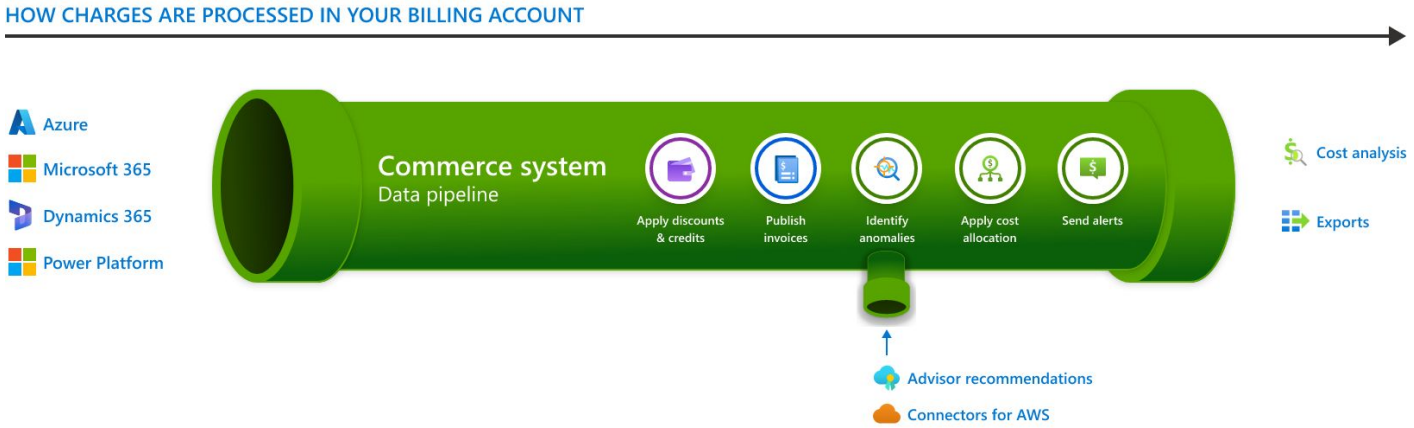
Microsoft Cost Management is a suite of tools that help organizations monitor, allocate, and optimize the cost of their Microsoft Cloud workloads.

Cost Management is available to anyone with access to a billing or resource management scope.

- Report on and analyze costs in the Azure portal, Microsoft 365 admin center, or externally by exporting data.
- Monitor costs proactively with budget, anomaly, and scheduled alerts.
- Split shared costs with cost allocation rules.
- Create and organize subscriptions to customize invoices.
- Configure payment options and pay invoices.
- Manage your billing information, such as legal entity, tax information, and agreements.

How charges are processed

The Data pipeline: At the end of the month, credits are applied, and the invoice is published. The process starts 72 hours after your billing period ends, which is usually the last day of the calendar month for most accounts.



Cost Analysis initial Dashboard

The initial cost analysis view includes the following areas:

Currently selected view: Represents the predefined cost analysis view configuration. Each view includes date range, granularity, group by, and filter settings.

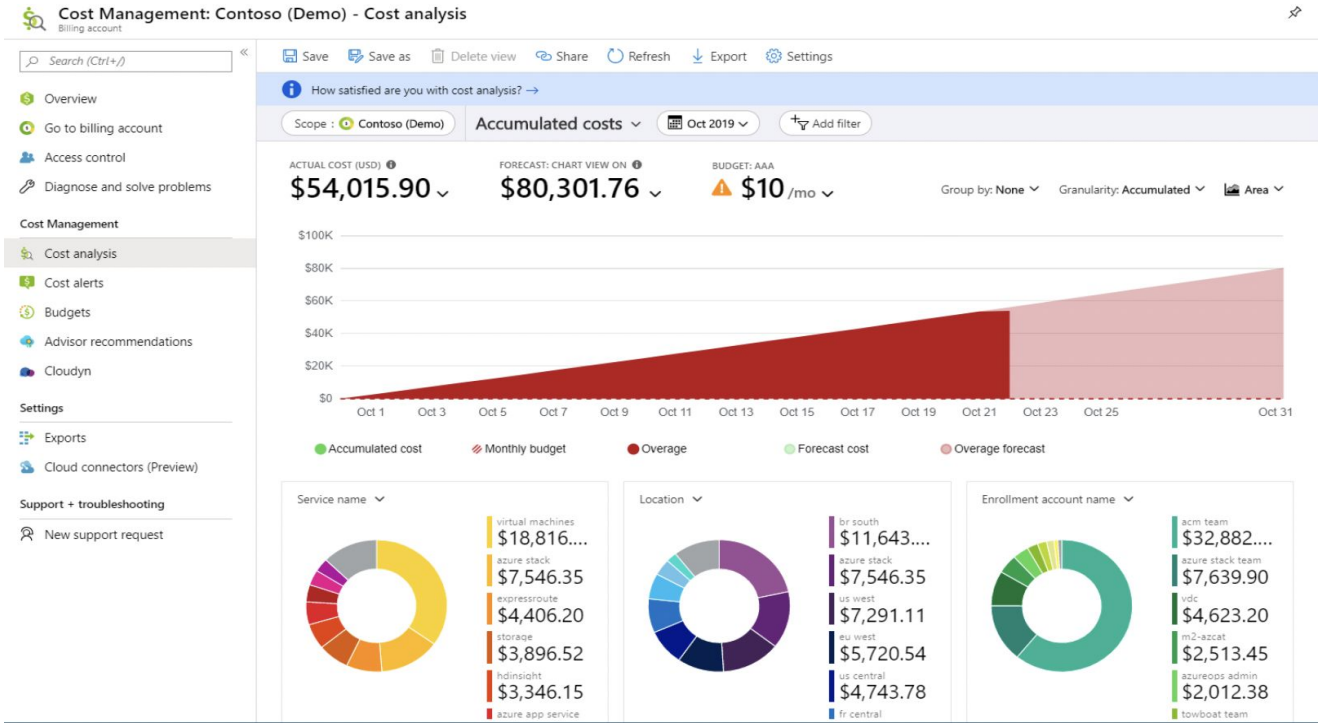
Filters: Allow you to limit the results to a subset of your total charges. Filters apply to all summarized totals and charts.

Cost: Shows the total usage and purchase costs for the selected period, as they're accrued and will show on your bill. Costs are shown in your billing currency by default.

Forecast: Shows the total forecasted costs the selected period.

Budget (if selected): Shows the current budget amount for the selected scope, if already defined.

Cost Analysis initial Dashboard



Budgets

Budgets in Cost Management help you plan for and drive organizational accountability. With budgets, you can account for the Azure services you consume or subscribe to during a specific period.

- Helps you notify others about thresholds.
- When thresholds are exceeded, alerts are triggered and notifications sent.
- Nothing is affected by the notifications.
- Your consumption won’t be affected.
- You can deploy a Budget programmatically using Bicep. DSL - Domain Specific Language
- Most of the Azure Accounts can have a Budget.

Budgets Bicep

A Budget defined on Bicep looks like this:

```
targetScope = 'subscription'

@description('Name of the Budget. It should be unique within a resource group.')
param budgetName string = 'MyBudget'

@description('The total amount of cost or usage to track with the budget')
param amount int = 1000

@description('The time covered by a budget. Tracking of the amount will be reset based on the time
@allowed([
  'Monthly'
  'Quarterly'
  'Annually'
])
param timeGrain string = 'Monthly'

@description('The start date must be first of the month in YYYY-MM-DD format. Future start date sh
param startDate string

@description('The end date for the budget in YYYY-MM-DD format. If not provided, we default this t
param endDate string

@description('Threshold value associated with a notification. Notification is sent when the cost e
param firstThreshold int = 90

@description('Threshold value associated with a notification. Notification is sent when the cost e
param secondThreshold int = 110

@description('The list of email addresses to send the budget notification to when the threshold is
param contactEmails array
```

Budgets ARM Templates

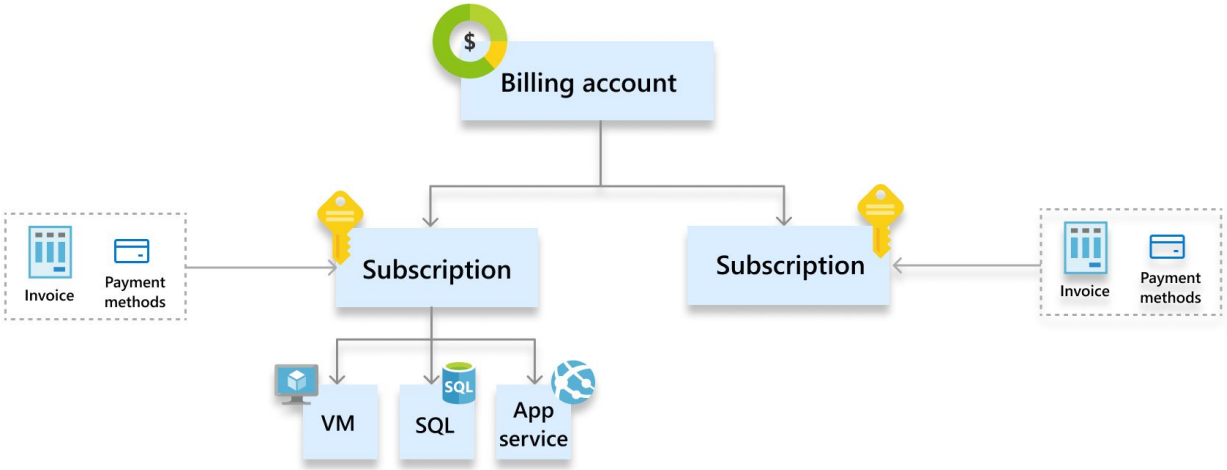
A Budget defined on ARM looks like this:

```
"resources": [
  {
    "type": "Microsoft.Consumption/budgets",
    "apiVersion": "2021-10-01",
    "name": "[parameters('budgetName')]",
    "properties": {
      "timePeriod": {
        "startDate": "[parameters('startDate')]",
        "endDate": "[parameters('endDate')]"
      },
      "timeGrain": "[parameters('timeGrain')]",
      "amount": "[parameters('amount')]",
      "category": "Cost",
      "notifications": {
        "NotificationForExceededBudget1": {
          "enabled": true,
          "operator": "GreaterThan",
          "threshold": "[parameters('firstThreshold')]",
          "contactEmails": "[parameters('contactEmails')]"
        },
        "NotificationForExceededBudget2": {
          "enabled": true,
          "operator": "GreaterThan",
          "threshold": "[parameters('secondThreshold')]",
          "contactEmails": "[parameters('contactEmails')]"
        }
      },
      "filter": {
        "dimensions": {
          "name": "ResourceGroupName",
          "operator": "In",
          "values": "[parameters('resourceGroupFilterValues')]"
        }
      }
    }
  }
]
}
```

Billing

A billing scope identifies your access. You may have access to multiple billing scopes. For example, you may have a billing account that you use for your personal projects and have access to your organization's billing account.

Every billing account can cover different resources:



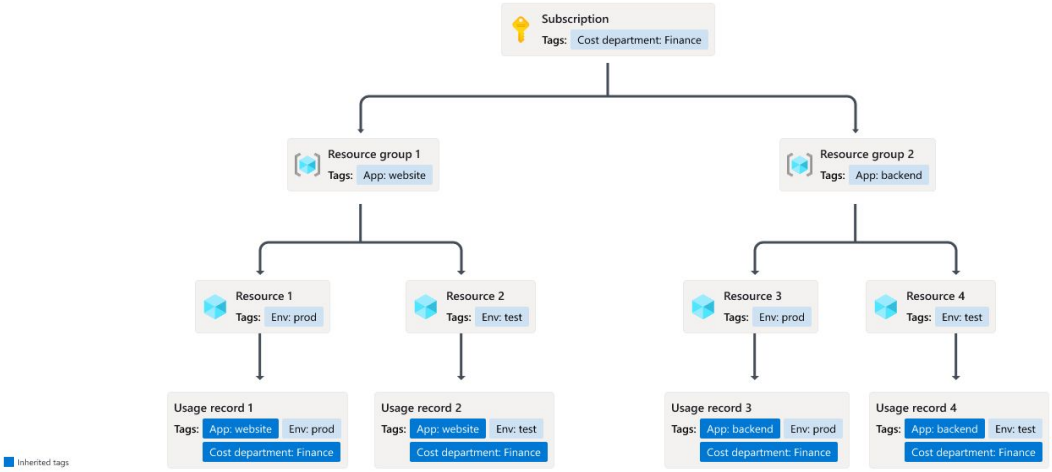
Billing Accounts

Azure has a bunch of different billing accounts:

- **Microsoft Online Services Program:** The most common billing account type, and it's created when a new personal or free tier account is launched.
- **Enterprise Agreement:** When your company signs a contract with or Enterprise agreement with Azure.
- **Microsoft Customer Agreement:** It's created when your organizations work with a Microsoft representative. It's similar to the online services and usually the free tiers or pay-as-you-go accounts.
- **Microsoft Partner Agreement:** A billing account for a Microsoft Partner Agreement is created for Cloud Solution Provider (CSP) partners to manage their customers in the new commerce experience.

Group and Cost Allocation with Tags

Azure tags are widely used to group costs to align with different business units, engineering environments, and cost departments. Tags provide the visibility needed for businesses to manage and allocate costs across the different groups.

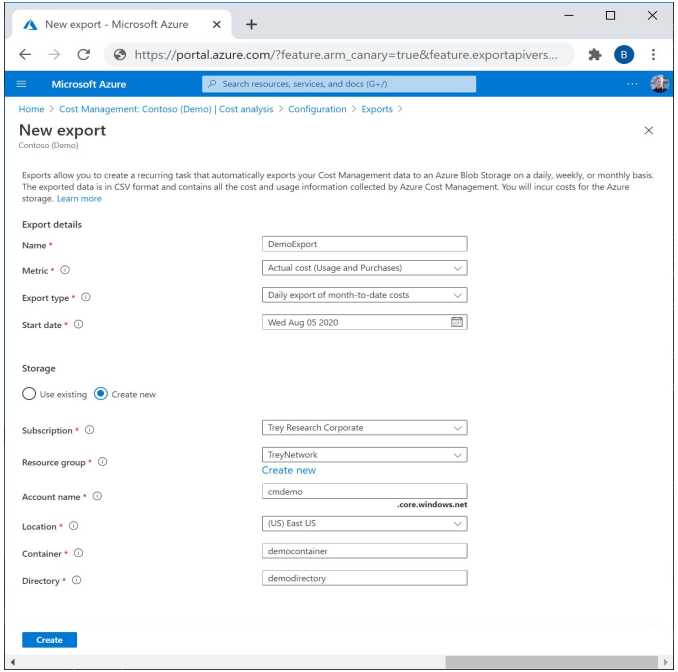


Tag Policies

Tagging can be enforced using a policy assignment. Every time that a new recourse it’s created under the scope of that billing, it will be force you to use the defined tag.

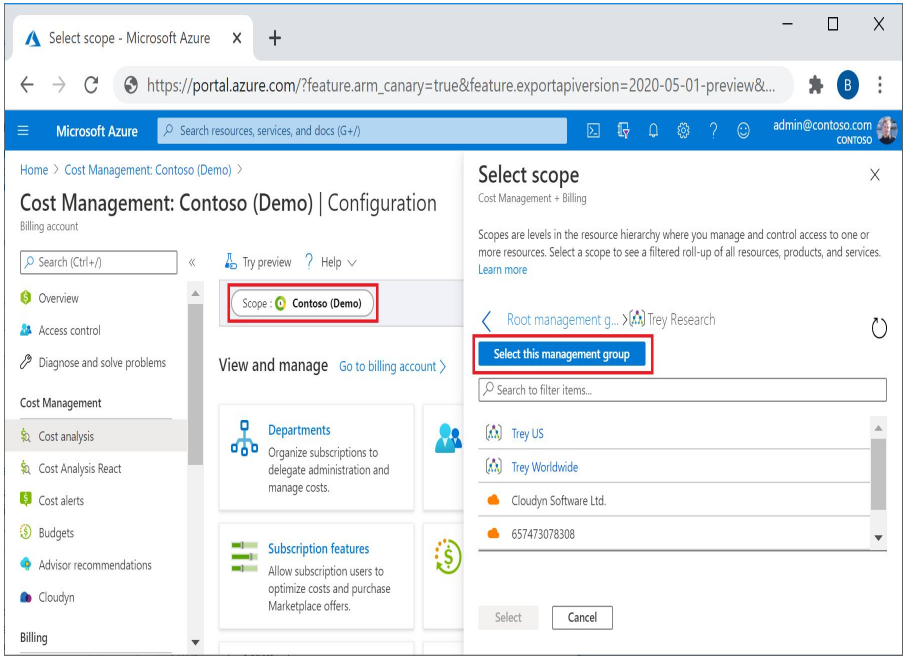
Scheduled Exports

Scheduled exports are affected by the time and day of week of when you initially create the export. When you create a scheduled export, the export runs at the same frequency for each export that runs later.



Scheduled Exports

You can group different scopes and select them to export.



Reservations

Azure Reservations help you save money by committing to one-year or three-year plans for multiple products. Committing allows you to get a discount on the resources you use. Reservations can significantly reduce your resource costs by up to **72%** from pay-as-you-go prices.

Why buy a Reservation?

If you have consistent resource usage that supports reservations, buying a reservation gives you the option to reduce your costs. For example, when you continuously run instances of a service without a reservation, you're charged at pay-as-you-go rates. When you buy a reservation, you immediately get the reservation discount. The resources are no longer charged at the pay-as-you-go rates.

- After purchase, the reservation discount automatically applies to the resource usage that matches the attributes you select when you buy the reservation.
- All reservations, except Azure Databricks, are applied on an hourly basis. Consider reservation purchases based on your consistent base usage.
- The reservation is charged to the payment method tied to the subscription. The reservation cost is deducted from your Azure Prepayment (previously called monetary commitment) balance, if available.

Q&A

Please answer the survey form of this session:

Thank you