



Learn Git and GitHub without any code!


Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

Read the guide

 [mpram / IoT_Academy](#)

<> Code

! Issues

 Pull requests

 Actions

 Projects

 Wiki

 Security

 master ▼

[IoT_Academy](#) / [Month_1](#) / [Day_3](#) /



manishakumari1992 day 3 ...

9 minutes ago

 History

..



PDF Files

9 minutes ago



2020-12-24-11-56-45.png

2 months ago



2020-12-24-12-14-52.png

2 months ago



2020-12-24-12-16-10.png

2 months ago



2020-12-24-12-44-28.png

2 months ago



2020-12-24-12-45-54.png

2 months ago



2020-12-24-12-48-49.png

2 months ago



2020-12-24-12-54-42.png

2 months ago



2020-12-24-13-01-03.png

2 months ago



2020-12-24-13-03-08.png

2 months ago



2020-12-24-13-19-54.png

2 months ago

2020-12-24-13-22-53.png

2 months ago

2020-12-24-13-24-30.png

2 months ago

2021-03-03-19-49-14.png

12 minutes ago

README.md

12 minutes ago

README.md

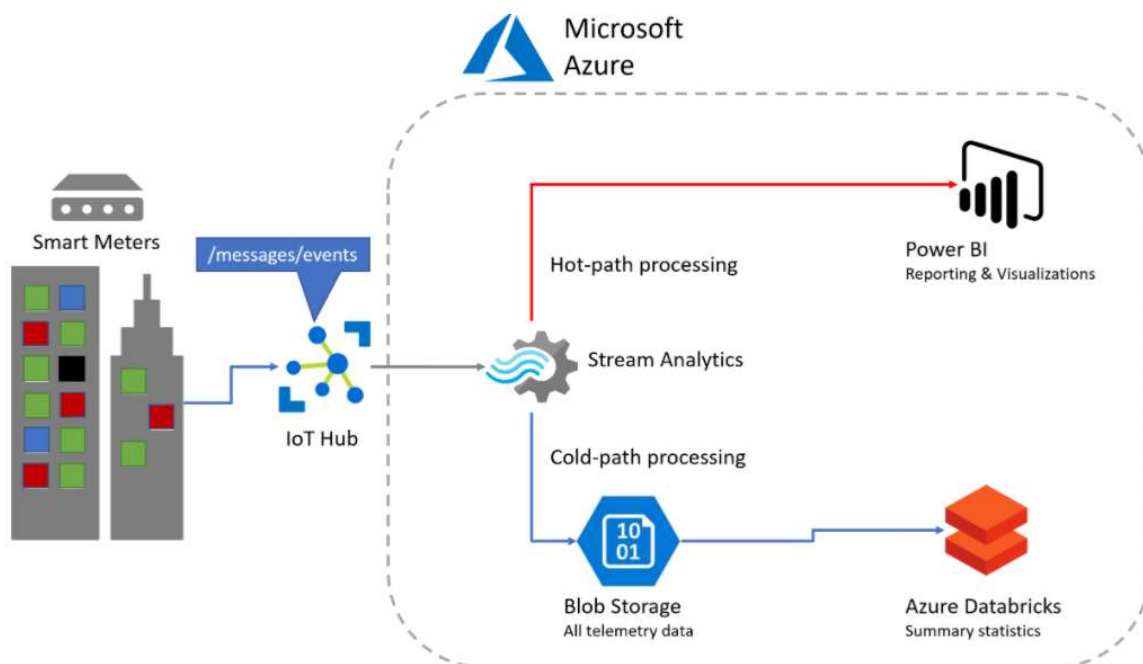


Pricing your architecture

Understanding, monitoring and optimizing your costs on Azure can get complex fast, as you grow to use more managed services, more virtual machines, and start provisioning resources automatically or in a self-service model. Azure Cost Calculator is a free cost management tool that can help you estimate your cloud costs for new Azure deployments, or variations of your existing workloads.

In this article, you will learn:

- What is Azure Pricing Calculator
- Azure Cost Calculator features
- Using the calculator to price the below architecture



What is Azure Pricing Calculator

Azure Pricing Calculator is a tool you can use to gain real-time cost estimates for your services. You can customize these estimates with personal configurations for greater accuracy, and can access and modify the estimates through a central dashboard. You can use the calculator, in combination with other resources such as the Azure TCO Calculator, to perform Azure cost optimization.

Azure Cost Calculator Features

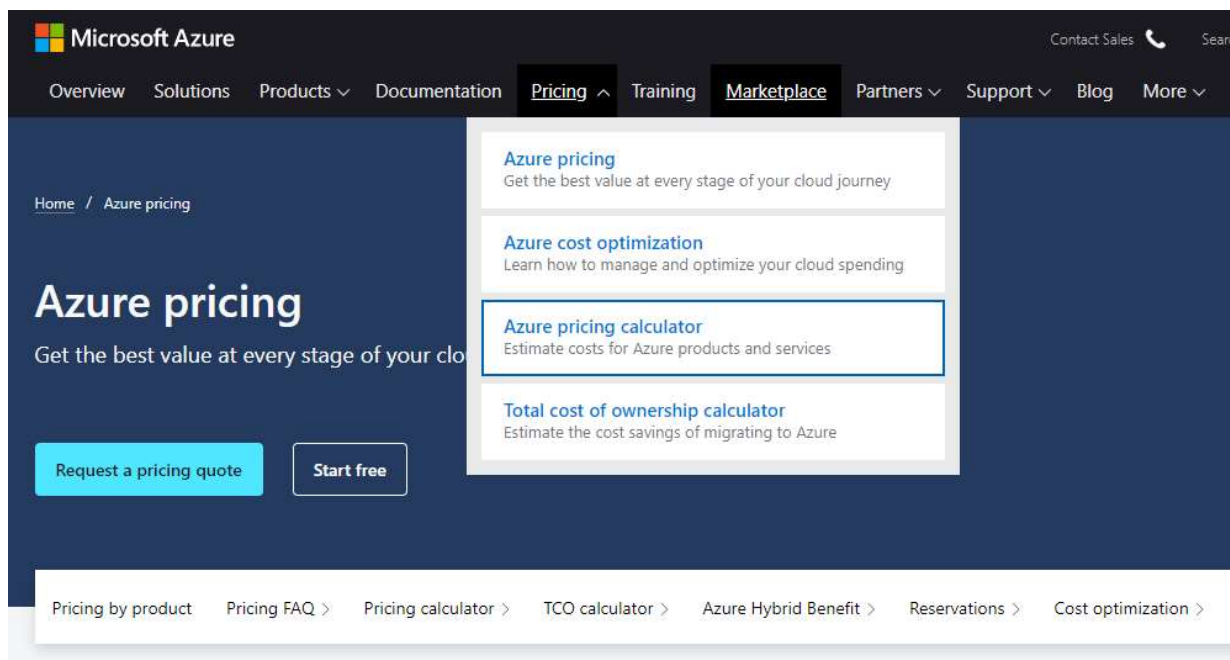
The Azure Cost Calculator provides several capabilities, including:

- See all Azure products and services, with a short description and a link to a product page. Each page has detailed specs and cost estimates.
- Customize services you wish to include per your storage requirements, resource consumption, performance expectations, and budget. As you read about and select services, the calculator caches your selections to ensure that progress is not lost.
- As you select services, you can swap back and forth between product screens and cost estimates. Each service you've selected is displayed with a cost breakdown on the estimates page. You can also return to product pages from the estimates screen in case you want to re-evaluate your options.
- If you find that you no longer want a service or want to edit your parameters, you can do so from the Estimate screen.
- Once you're satisfied with your estimate, you can click Purchase options. You can then either purchase resources directly through the Azure site, via your Microsoft representative, or via a managed service partner.

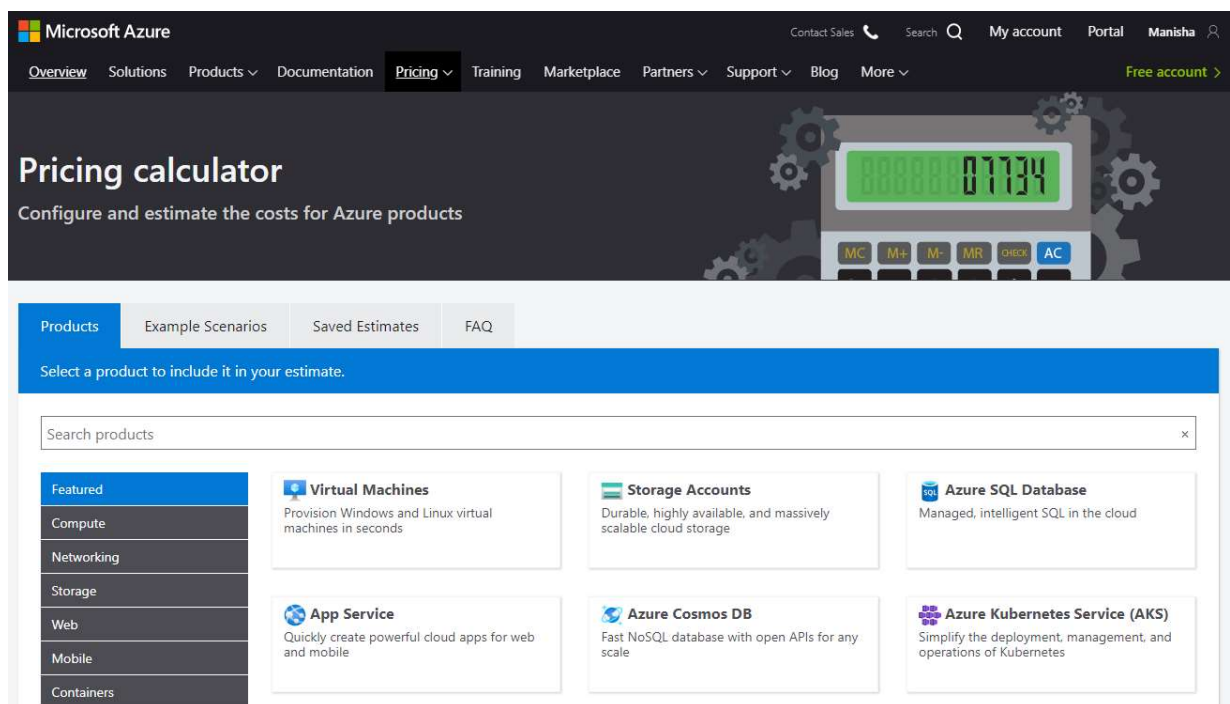
How to Use Azure Cost Calculator

Using the Azure Cost Calculator is very straightforward. Below is a brief outline you can use to access and operate the calculator.

1. From the Azure [Pricing](#) page, click on Pricing calculator.

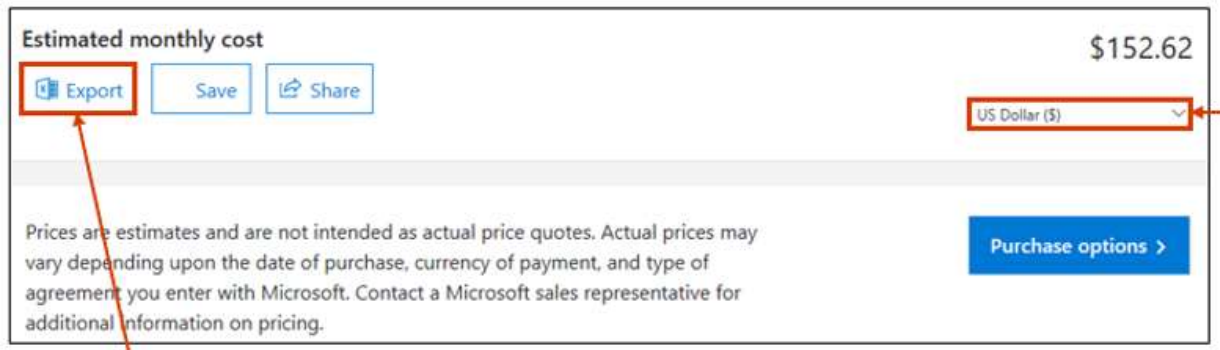


2. Search for the products you want or select from the featured products below the search bar. You can also click the Example Scenarios tab if you'd rather modify a template set-up.



3. In the search box, type IoT Hub and click on it to add it to your price estimate. Change the parameters of the IoT Hub created to best suit your needs. In this case, select IoT Hub tier as **Standard**, select region as **East US** and Edition as **S1**
4. Repeat step 3 for **Virtual Machines**, **Stream Analytics**, **Databricks**, **Blob Storage** and **Power BI**

5. Once you've added your services, you can see the estimate and provide product specifications in the Saved Estimates tab.
6. As you add products, you can modify the configuration of each product in your estimate to optimize your costs. You can also see how resources overlap, for example if two Azure services use the same underlying storage or compute services.
7. After you finish, you have the option to Export to Excel, Save, or Share your estimate report. Saved reports remain in the Saved Estimates tab.



Monitor costs

So, now you have created your cost model and bought resources to implement your architecture. The next question is how do you monitor these costs and make sure you don't exceed your budget while getting optimal performance from all your resources.

Generate cost reports

To monitor the cost of the workload, use Azure cost tools or custom reports. The reports can be scoped to business units, applications, IT infrastructure shared services, and so on. Make sure that the information is consistently shared with the stakeholders.

Azure provides cost tools that can help track cloud spend and make recommendations.

- [Azure TCO Calculator](#)
- [Cost Analysis](#)
- [Azure Advisor](#)

Exercise 1: Azure TCO Calculator

When evaluating your usage of the Azure cloud, it's important to consider the total cost of ownership (TCO). TCO is key to understanding the real cost of your projects and measuring your return on investment (ROI). Azure offers a TCO calculator, one of a set of Azure cost management tools, that lets you estimate the cost of migrating your server workloads to Azure and predict your potential savings for existing workloads.

What is Total Cost of Ownership (TCO)?

TCO is the cost of a product or service plus any operating costs. You can use TCO to weigh risk against reward when acquiring services, hardware, or applications. TCO calculations are key to strategic procurement and ensuring the greatest possible return on investment (ROI). To calculate TCO, you need to use a variety of tools and processes which can help you assign dollar amounts to intangibles. When calculating TCO for on-premise purchases, you should take into account facility and labor costs. For public clouds, it can be easier to estimate TCO because all aspects of the computing services are provided and priced by the cloud provider. This is where the Azure TCO Calculator comes in.

Azure TCO Calculator: What Is it Used For?

For users wishing to adopt cloud services, Azure provides a web-based TCO Calculator. You can use this calculator to estimate the costs of migrating your data and applications to Azure and predict potential savings.

How to use TCO Calculator

Step 1: Navigate to <https://azure.microsoft.com/en-us/pricing/tco/calculator/>



Bulk Upload

My saved reports

Define your workloads

Enter the details of your on-premises workloads. This information will be used to understand your current TCO and recommended services in Azure.

Servers

Enter the details of your on-premises server infrastructure. After adding a workload, select the workload type and enter the remaining details.

+ Add server workload

Databases

Enter the details of your on-premises database infrastructure. After adding a database, enter the details of your on-premises database infrastructure in the Source section. In the Destination section, select the Azure service you would like to use.

+ Add database

Step 2: Add all your on-premise workloads here and adjust assumptions in the next step



My saved reports

Adjust assumptions

The following assumptions in the TCO model are industry averages accredited by Nucleus Research. To get a more accurate TCO report, update and customize these values to reflect your situation, which can vary by industry and location.

Currency

US Dollar (\$)

Software Assurance coverage (provides Azure Hybrid Benefit)

Enable this if you have purchased this benefit for your on-premises Windows or SQL Servers. If enabled, Azure Hybrid Benefit (AHB) will be applied to Azure estimates. AHB helps you get more value from your on-premises licenses — save up to 40 percent on virtual machines and up to 82 percent with Azure Reserved Virtual Machines (VM) instances.

Windows Server Software Assurance coverage



SQL Server Software Assurance coverage



[Learn more about Software Assurance >](#)

[Learn more about Azure Hybrid Benefit >](#)

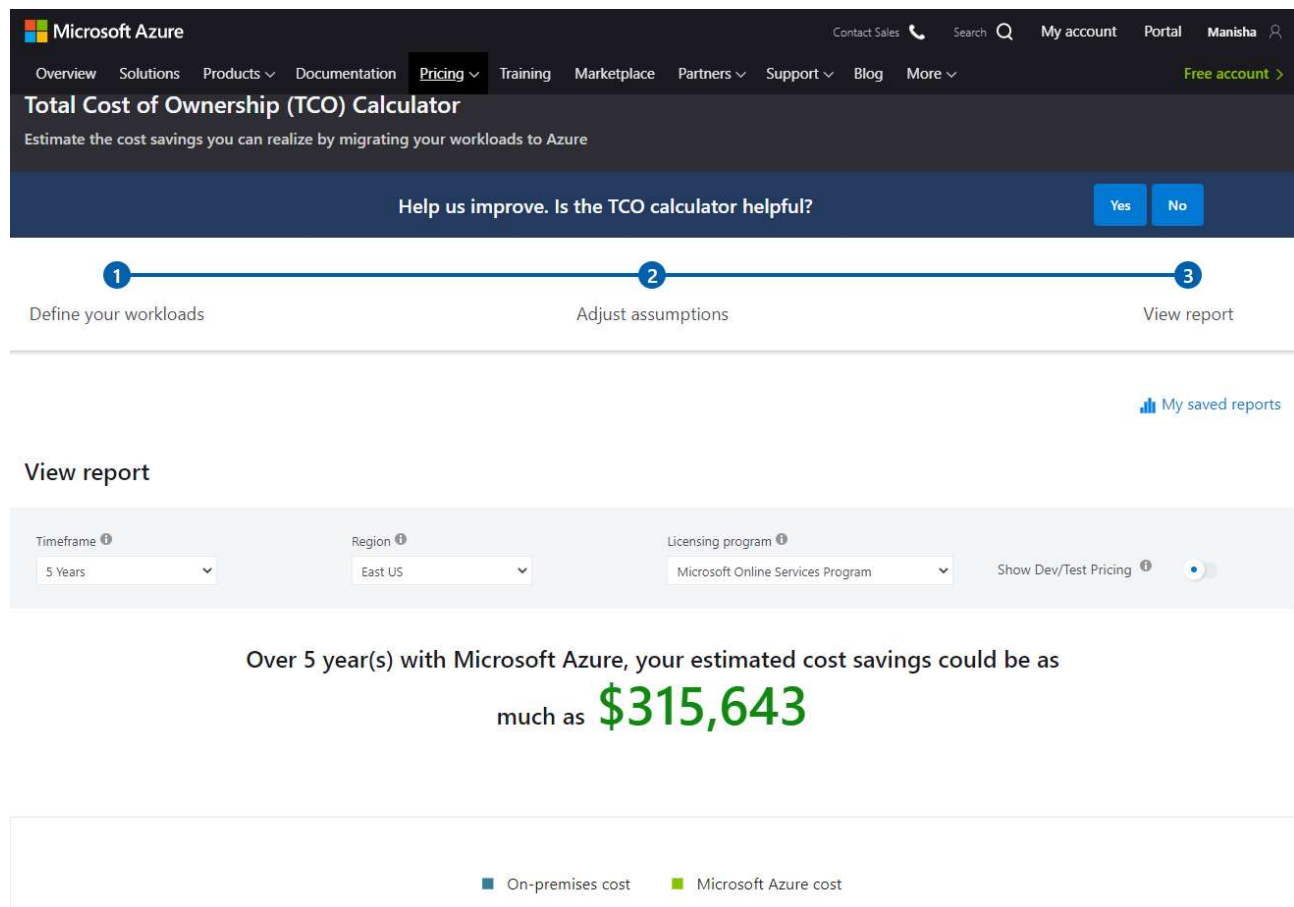
Geo-redundant storage (GRS)

GRS replicates your data to a secondary region that is hundreds of miles away from the primary region.



[Learn more about GRS >](#)

Step 3: And your savings report is ready to view. Just 3 simple steps to calculate TCO. You can use the TCO calculator to measure ROI yourself or to make a convincing case to move to cloud from on-premises to your colleagues and leadership



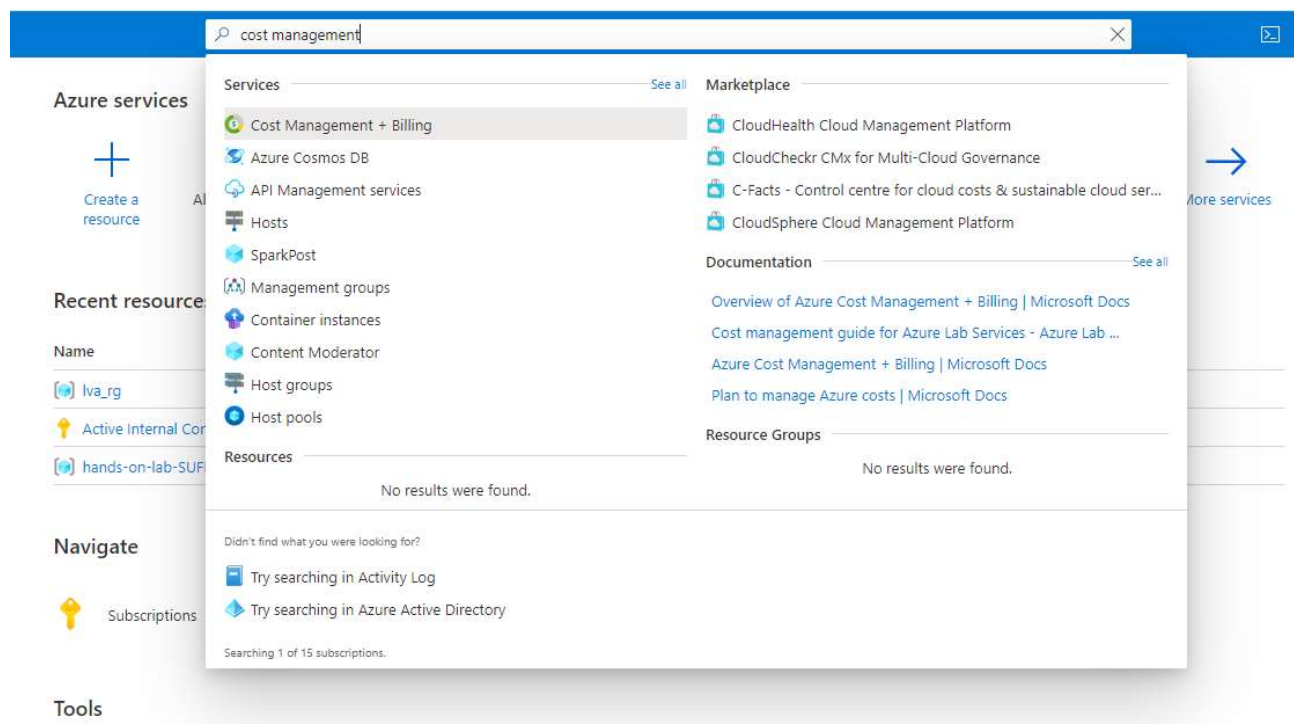
Exercise 2: Cost analysis

Cost analysis is a tool in Azure Cost Management that allows you to view aggregated costs over a period. This view can help you understand your spending trends.

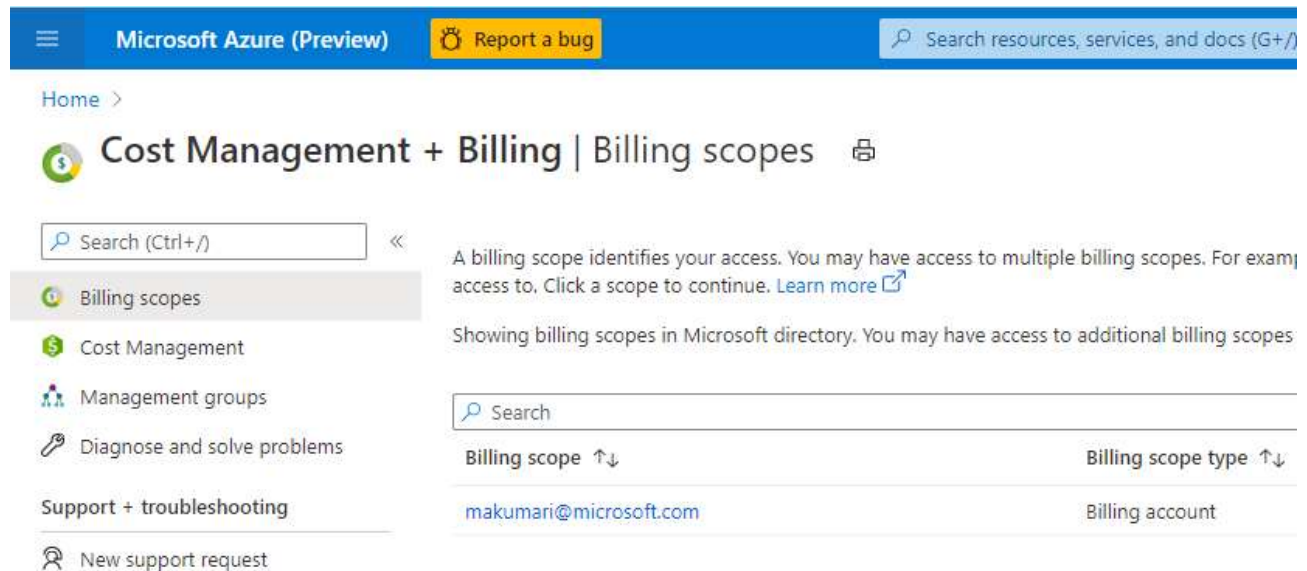
View costs at different scopes, such as for a resource group or specific resource tags. Cost Analysis provides built-in charts and custom views. You can also download the cost data in CSV format to analyze with other tools.

Step 1: Sign in to the Azure portal at <https://portal.azure.com>

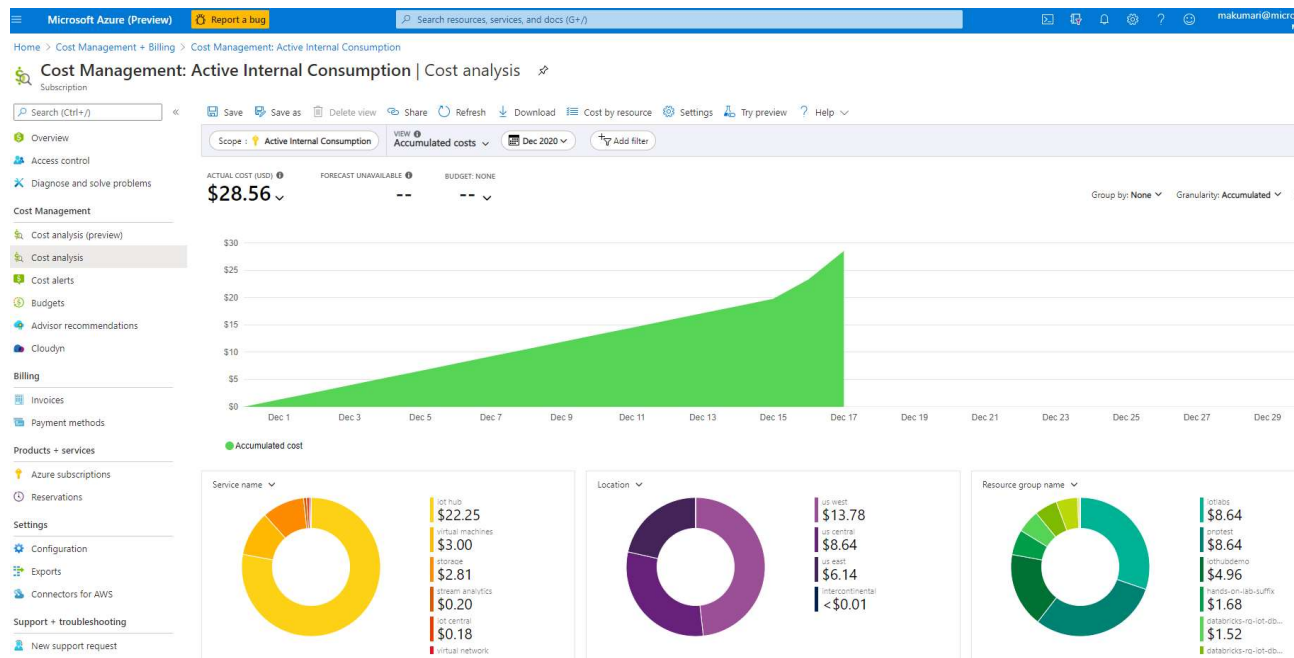
- Review costs in cost analysis To review your costs in cost analysis, go to cost management+ billing



Step 2: Open the scope in the Azure portal and select Cost analysis in the menu.



Step 3: Click on Cost Management on the left side pane and then click on Cost Analysis



Here, you can see your costs broken down by date, month, location and resource group so you have a variety of views to meet your needs.

Step 4: To further leverage this, click on View and change it to cost by resource, daily costs etc.

Cost Management: Active Internal Consumption | Cost analysis

Scope: Active Internal Consumption | View: Cost by resource | Dec 2020 | Add filter

ACTUAL COST (USD) \$28.56 | FORECAST UNAVAILABLE

Filter items

61 rows

Resource	Location	Resource group name	Tags
> terrylab1	us west	iotlabs	--
> iothubpnptest	us central	pnptest	--
> iothubdemo08042020	us west	iothubdemo	--
> iothubdemo08042020_disk1_3585561beeb...	us west	iothubdemo	--
> labvm	us east	hands-on-lab-suffix1	--
> smartmeter-hub1-suffix	us east	hands-on-lab-suffix	--
> smartmeter-hub1-suffix_6645198	us east	hands-on-lab-suffix	--
> smartmeter-hub1-suffix1_6671484	us east	hands-on-lab-suffix1	--
> terrylab1_3879283	us west	iotlabs	--
> iothubpnptest_5505426	us central	pnptest	--
> labvm_osdisk_1_7b65b18893d14d22949b60...	us east	hands-on-lab-suffix	--
> 3794d2035c8d416ca3e90b77512616ca	us east	databricks-rg-iot-db-workspace-suffix-z5iuuqzot...	©
> 404274231a52478db3a7257165af6b0e	us east	databricks-rg-iot-db-workspace-suffix-z5iuuqzot...	©
> 40b687a0056540918f68eed0bde13c0d	us east	databricks-rg-iot-db-workspace-suffix-z5iuuqzot...	©
> 02b42424964d406fb67c90082980a9ea	us east	databricks-rg-iot-db-workspace-suffix-c35tg2u...	©

Exercise 3: Azure Advisor

What is Azure Advisor

Advisor is a personalized cloud consultant that helps you follow best practices to optimize your Azure deployments. It analyzes your resource configuration and usage telemetry and then recommends solutions that can help you improve the cost effectiveness, performance, Reliability (formerly called High availability), and security of your Azure resources.

How to use Azure Advisor

Step 1: To access your Azure Advisor, sign into Azure portal at <https://portal.azure.com>

- Type Advisor in the Search bar and select Advisor from the drop-down menu. You will get a view of recommendations for cost optimizing, security, reliability, operational excellence, performance etc.

The screenshot shows the Microsoft Azure (Preview) portal interface. At the top, there's a navigation bar with 'Microsoft Azure (Preview)' and a 'Report a bug' button. Below this is a search bar and a 'Home' link. The main header area displays 'Advisor | Overview' with a search bar and several action links: 'Feedback', 'Download as CSV', 'Download as PDF', and 'Try the new Advisor Score (preview)'. A message states 'Your recommendations have been loaded'. Below this, a section for 'Subscriptions' shows '1 of 15 selected' with a link to 'Open Directory + Subscription settings'. A dropdown menu is set to 'Active Internal Consumption' and a status is 'Active'. The main content area is a grid of recommendation categories: 'Cost', 'Security', 'Reliability', 'Operational excellence', and 'Performance'. Each category has a green checkmark icon and text indicating that all recommendations are followed. The 'Security' category shows '9 Recommendations' with a breakdown: '9 High impact', '0 Medium impact', and '0 Low impact'. It also shows '1 Impacted resource'. The 'Operational excellence' and 'Performance' categories also show '1 Impacted resource'. A 'Try Advisor Score' button is located at the bottom right of the grid.

Step 2: Since, I have 9 recommendations in Security, I will click on it and see the recommendations

Microsoft Azure (Preview)

Report a bug

Search resources, services, and docs (G+)

Home > Advisor

Advisor | Security

Search (Ctrl+/)

Feedback

Download as CSV

Download as PDF

Try the new Advisor Score (preview)

Subscriptions: 1 of 15 selected – Don't see a subscription? [Open Directory](#) + [Subscription settings](#)

Active Internal ConsumptionActiveNo grouping

Your security experience may be limited. [Click here to learn more](#)

Total recommendations9

Recommendations by impact

9 High impact0 Medium impact0 Low impact

Impacted resources1

Security alerts--
Standard plan feature

To see more about Secure Score and Security recommendations, visit [Security Center](#)

Impact	Description	Impacted resources
High	There should be more than one owner assigned to your subscription	1 Subscription
High	Azure Defender for container registries should be enabled	1 Subscription
High	Azure Defender for Kubernetes should be enabled	1 Subscription
High	Azure Defender for Storage should be enabled	1 Subscription
High	Azure Defender for Azure SQL Database servers should be enabled	1 Subscription
High	Azure Defender for App Service should be enabled	1 Subscription
High	Azure Defender for servers should be enabled	1 Subscription

I can look at these recommendations and make changes if I wish. I can also download it as PDF or CSV file and save it for later use or share it with any co-owners of the account.