Microsoft Azure Administrator

Module-03 : Azure Cost management and Service level agreements (SLA)

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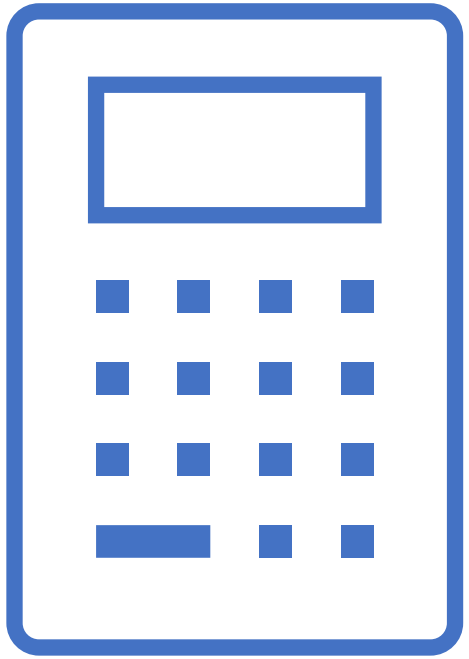


Azure Pricing Calculator and TCO Calculator

What is Azure Pricing Calculator?

- The Pricing calculator displays Azure products in categories. You add these categories to your estimate and configure according to your specific requirements
- You then receive a consolidated estimated price, with a detailed breakdown of the costs associated with each resource you added to your solution
- You can export or share that estimate or save it for later
- You can load a saved estimate and modify it to match updated requirements
- You also can access pricing details, product details, and documentation for each product from within the Pricing calculator
- Azure Pricing Calculator Link: https://azure.microsoft.com/en-us/pricing/calculator/

What is Total Cost of Ownership (TCO) Calculator?

- The TCO Calculator helps you estimate the cost savings of operating your solution on Azure over time, instead of in your on-premises datacenter
- Link to TCO : https://azure.microsoft.com/pricing/tco/calculator
- With the TCO Calculator, you enter the details of your on-premises workloads.
- Then you review the suggested industry average cost (which you can adjust) for related operational costs
- These costs include electricity, network maintenance, and IT labor. You're then presented with a side-by-side report
- Using the report, you can compare those costs with the same workloads running on Azure

How does the TCO Calculator work?

Working with the TCO Calculator involves three steps:

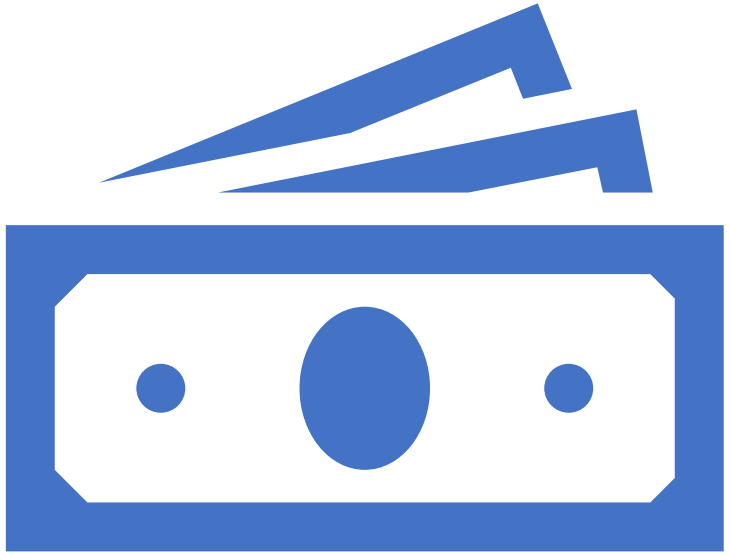
1) Define your workloads (Servers, Databases, Storage, Networking)
2) Adjust assumptions (Electricity, IT Maintenance etc.)
3) View the report

Lab: Calculate cost by using TCO

In this lab, you have to use the Total Cost of Ownership (TCO) Calculator to compare the cost of running a sample workload in the datacenter versus on Azure.

On-premise resource details are as follows:

1) 50 virtual machines (VMs)
2) Storage Area Network (SAN) with 60 terabytes (TB) of disk storage
3) You consume an estimated 15 TB of outbound network bandwidth each month



Purchasing Azure Services

How are services priced in Microsoft Azure?

It is very important to learn how costs are generated in **Azure** so that you can understand how you're purchasing, and solution design decisions can impact your final cost.

After your initial analysis, you will come up with below questions:

1) What types of Azure subscriptions are available?
2) How do we purchase Azure services?
3) Does location or network traffic affect cost?
4) What other factors affect the final cost?
5) How can we get a more detailed estimate of the cost to run on Azure?

1. What types of Azure subscriptions are available?

Azure offers both free and paid subscription options to fit your needs and requirements.

They are:

1. **Free trial** : A free trial subscription provides you with 12 months of popular free services.
2. **Pay-as-you-go**: A pay-as-you-go subscription enables you to pay for what you use by attaching a credit or debit card to your account.
3. **Member offers:** Your existing membership to certain Microsoft products and services might provide you with credits for your Azure account and reduced rates on Azure services.

2. How do I purchase Azure services?

There are three main ways to purchase services on Azure.

They are:

1. **Through an Enterprise Agreement**: Larger customers, known as enterprise customers, can sign an Enterprise Agreement with Microsoft.
2. **Directly from the web**: Here, you purchase Azure services directly from the Azure portal website and pay standard prices. This purchasing method is known as Web Direct.
3. **Through a Cloud Solution Provider:** A Cloud Solution Provider (CSP) is a Microsoft Partner who helps you build solutions on top of Azure. Your CSP bills you for your Azure usage at a price they determine.

3. What factors affect cost?

Let's take a quick look at each:

1) **Resource type** : Ex. storage account you specify a type (such as block blob storage or table storage), a performance tier (standard or premium).
2) **Usage meters**: When you provision a resource, Azure creates meters to track usage of that resource. Azure uses these meters to generate your bill.
3) **Azure subscription types**: Some Azure subscription types also include usage allowances, which affect costs. Ex. Free tier subscription
4) **Azure Marketplace**: You can also purchase Azure-based solutions and services from third-party vendors through Azure Marketplace.

4. Does location or network traffic affect cost?

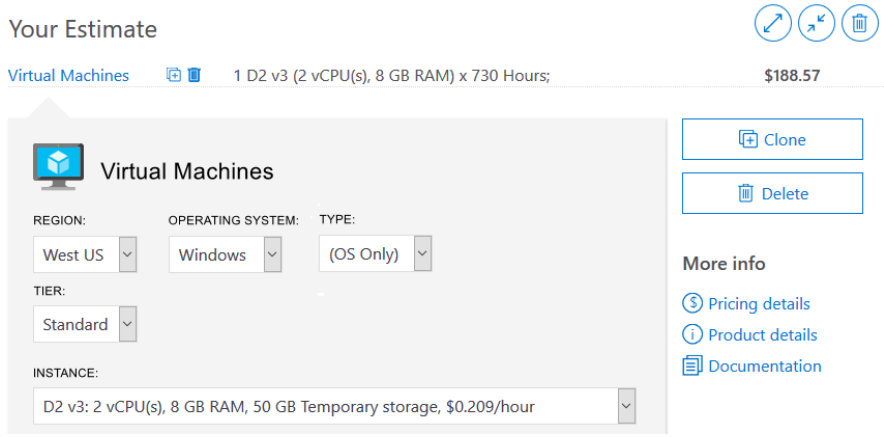
When you provision a resource in Azure, you need to define the location (known as the Azure region) of where it will be deployed.

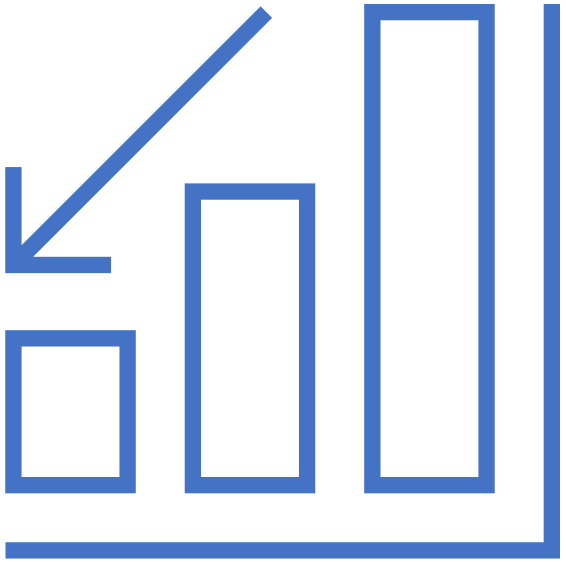
Let's see why this decision can have cost consequences.

1) **Location**
2) **Zones for billing of network traffic:** A **zone** is a geographical grouping of Azure regions for billing purposes. The following zones include some of the regions as shown here:
   - **Zone 1**: Australia Central, West US, East US, Canada West, West Europe, France Central, and others
   - **Zone 2**: Australia East, Japan West, Central India, Korea South, and others
   - **Zone 3**: Brazil South, South Africa North, South Africa West, UAE Central, UAE North

5. How can I estimate the total cost?

- The **Pricing calculator** displays Azure products in categories
- https://azure.microsoft.com/en-in/pricing/calculator/
- You add these categories to your estimate and configure according to your specific requirements
- You then receive a consolidated estimated price, with a detailed breakdown of the costs associated with each resource you added to your solution
- You can export or share the estimates

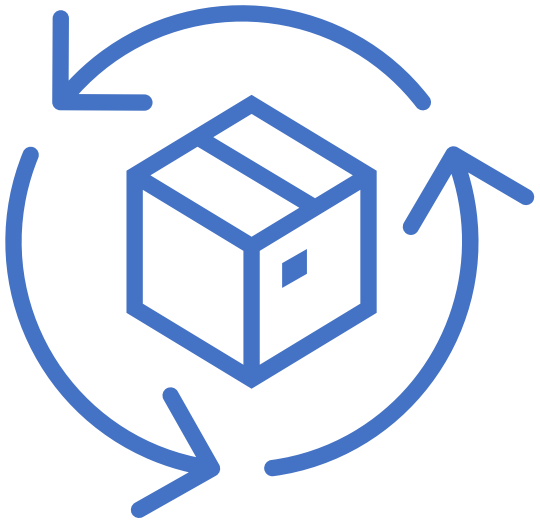




How to Minimize Total Cost in Azure?

Manage and Minimize total cost in Azure

- Understand estimated costs before you deploy (using TCO and Pricing Calculator)
- **Use spending limits to restrict your spending. Ex. Quotas**
- Resize underutilized virtual machines
- Use **Azure Reservations** to prepay
- Research available cost-saving offers
- Apply **Tags** to identify cost owners
- **Deallocate virtual machines** during off hours
- Use **Azure Advisor** to monitor your usage. **Azure Advisor** identifies unused or underutilized resources and recommends unused resources that you can remove. This information helps you configure your resources to match your actual workload.

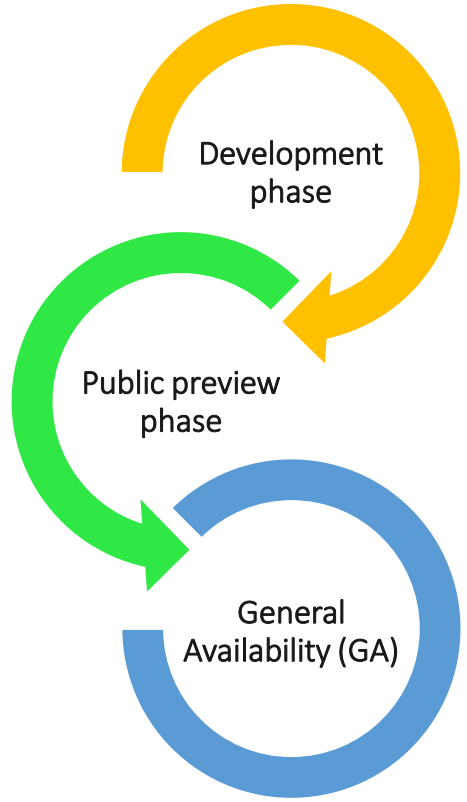


Azure Service Lifecycle

Azure Service Life cycle

The **service lifecycle** defines how every Azure service is released for public use.

1. **Development phase:** Every Azure service starts in the Development phase. In this phase, the Azure team collects and defines its requirements, and begins to build the service
2. **Public preview phase:** During this phase, the public can access and experiment with it so that it can provide feedback
3. **General Availability (GA):** After a new Azure service is validated and tested, it's released to all customers as a production-ready service



Knowledge Check

Knowledge Check

Which is the best first step the team should take to compare the cost of running these environments on Azure versus in their datacenter?

1) They're just test environments. Spin them up and check the bill at the end of the month.
2) Assume that running in the cloud costs about the same as running in the datacenter.
3) Run the Total Cost of Ownership Calculator.

Knowledge Check

What's the best way to ensure that the development team doesn't provision too many virtual machines at the same time?

1) Do nothing. Let the development team use what they need.

2) Apply spending limits to the development team's Azure subscription.

3) Verbally give the development lead a budget and hold them accountable for overages.