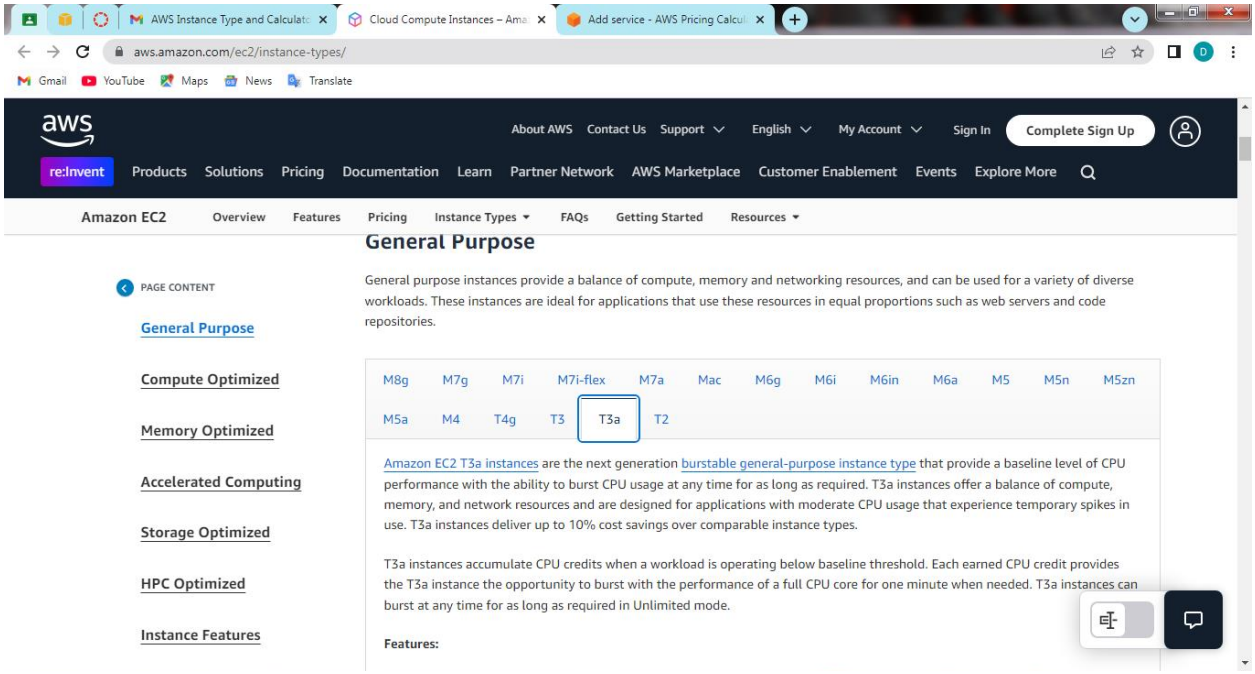
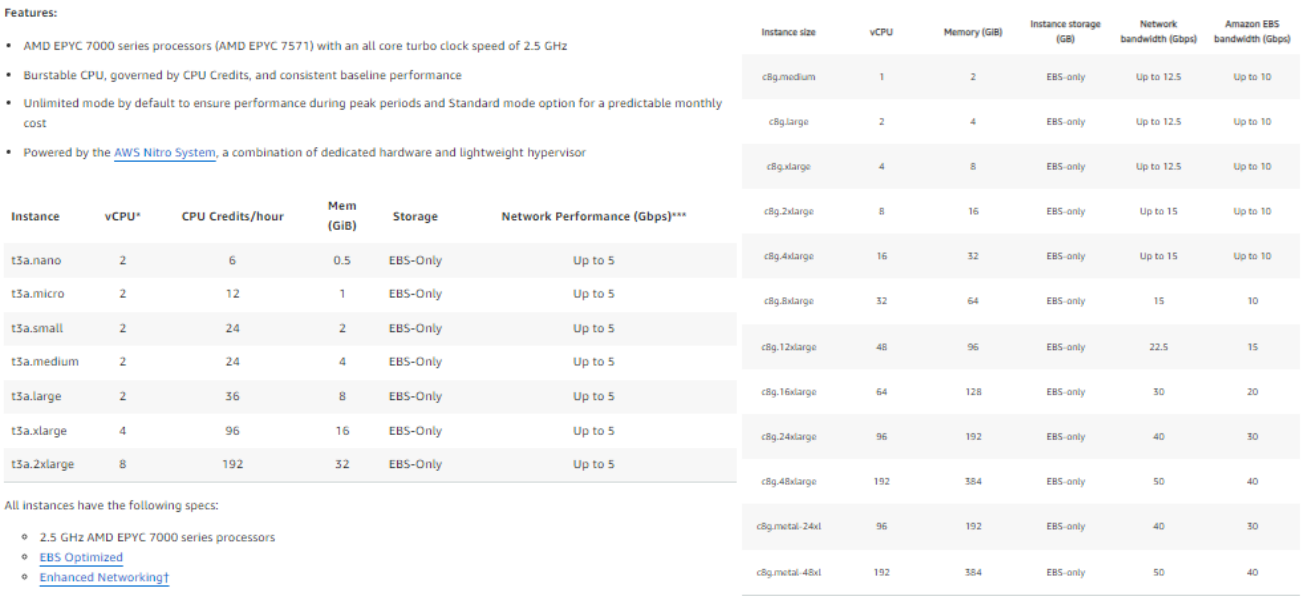
Day-1

I had a brief interaction with the Assistant Manager - Information Technology and got a detailed introduction to computing services, an overview of the cloud, its working, architecture, and the overall landscape.

Got the information of instances and what are the types, what type of computing is supported in an instance, etc. Here I have attached the info of the instances.



For Example: The Feature of T3a instances are as follows…



Features:

- AMD EPYC 7000 series processors (AMD EPYC 7571) with an all core turbo clock speed of 2.5 GHz
- Burstable CPU, governed by CPU Credits, and consistent baseline performance
- Unlimited mode by default to ensure performance during peak periods and Standard mode option for a predictable monthly cost
- Powered by the AWS Nitro System, a combination of dedicated hardware and lightweight hypervisor

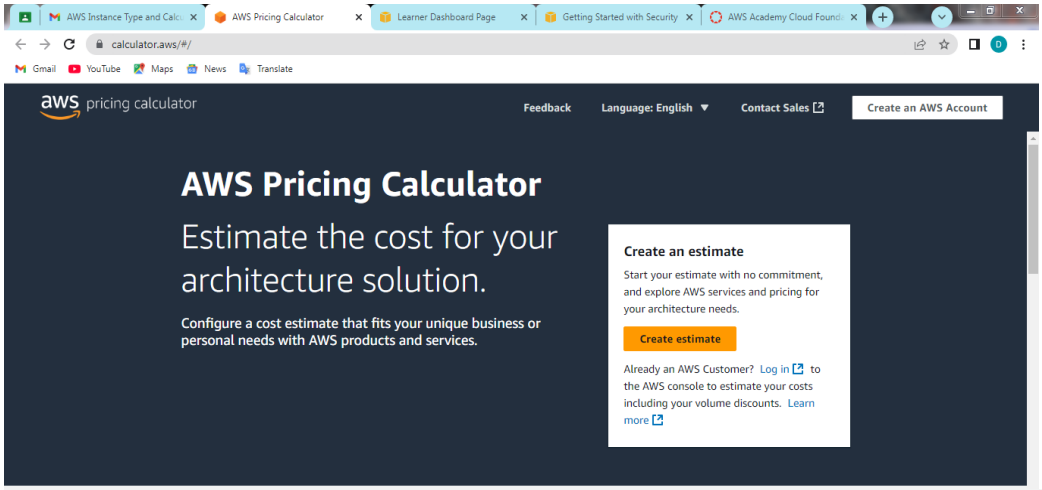
Instance	vCPU*	CPU Credits/hour	Mem (GiB)	Storage	Network Performance (Gbps)***
t3a.nano	2	6	0.5	EBS-Only	Up to 5
t3a.micro	2	12	1	EBS-Only	Up to 5
t3a.small	2	24	2	EBS-Only	Up to 5
t3a.medium	2	24	4	EBS-Only	Up to 5
t3a.large	2	36	8	EBS-Only	Up to 5
t3a.xlarge	4	96	16	EBS-Only	Up to 5
t3a.2xlarge	8	192	32	EBS-Only	Up to 5

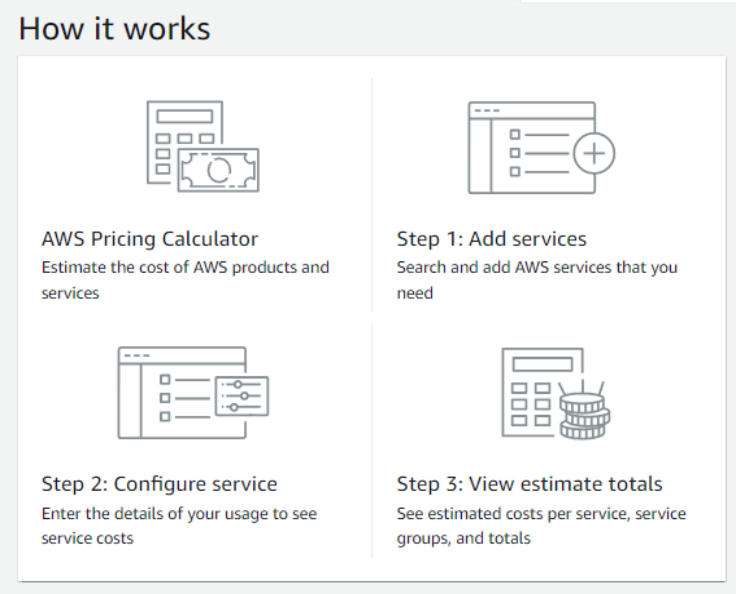
All instances have the following specs:

- 2.5 GHz AMD EPYC 7000 series processors
- EBS Optimized
- Enhanced Networking†

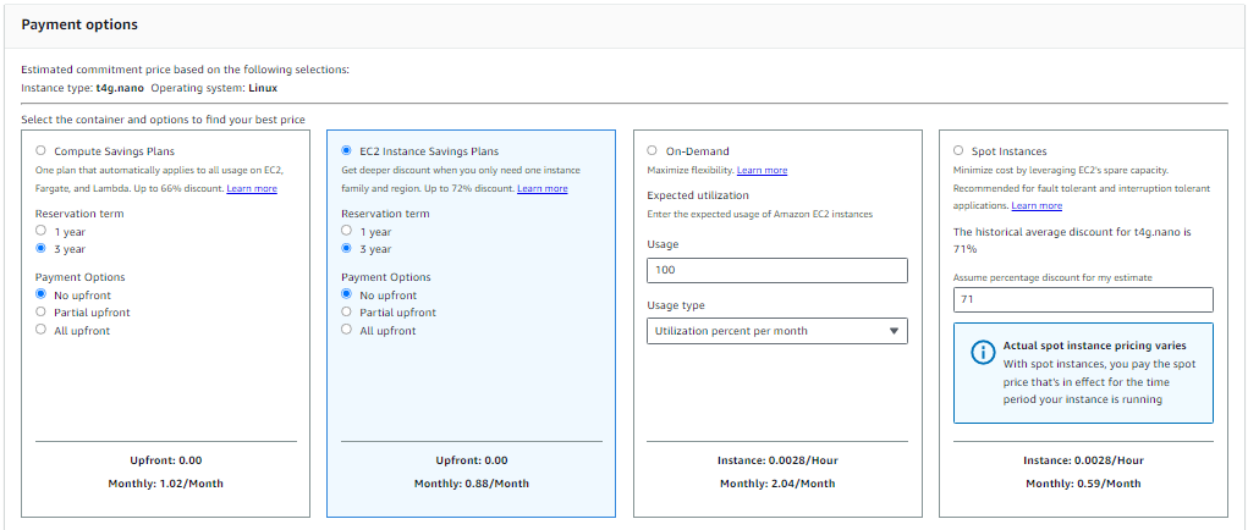
Instance size	vCPU	Memory (GiB)	Instance storage (GB)	Network bandwidth (Gbps)	Amazon EBS bandwidth (Gbps)
c8g.medium	1	2	EBS-only	Up to 12.5	Up to 10
c8g.large	2	4	EBS-only	Up to 12.5	Up to 10
c8g.xlarge	4	8	EBS-only	Up to 12.5	Up to 10
c8g.2xlarge	8	16	EBS-only	Up to 15	Up to 10
c8g.4xlarge	16	32	EBS-only	Up to 15	Up to 10
c8g.8xlarge	32	64	EBS-only	15	10
c8g.12xlarge	48	96	EBS-only	22.5	15
c8g.16xlarge	64	128	EBS-only	30	20
c8g.24xlarge	96	192	EBS-only	40	30
c8g.48xlarge	192	384	EBS-only	50	40
c8g.metal-24xl	96	192	EBS-only	40	30
c8g.metal-48xl	192	384	EBS-only	50	40

I also got a brief explanation of the pricing service. So, I am currently using the pricing service to gain a deeper understanding of the service.





Payment Costing:



Detailed Calculations:

▼ Show calculations

Breakeven analysis

A cost-optimized strategy for your utilization is found by calculating the breakeven point when EC2 Instance Savings Plans instances are more cost effective to use than On-Demand Instances.

EC2 Instance Savings Plans rate for t4g.nano in the Asia Pacific (Mumbai) for 3 Year term and No Upfront is 0.0012 USD
Hours in the commitment: 365 days * 24 hours * 3 year = 26280.0000 hours
Total Commitment: 0.0012 USD * 26280 hours = 31.5360 USD
Upfront: No Upfront (0% of 31.536) = 0.0000 USD
Hourly cost for EC2 Instance Savings Plans = (Total Commitment - Upfront cost)/Hours in the term: (31.536 - 0.00)/26280 = 0.0012 USD
Normalized EC2 Instance Savings Plans monthly price: (0.000000 USD / 36 months) + (0.001200 USD x 730 hours in a month) = 0.876000 USD
On-Demand hourly price: 0.002800 USD
Normalized On-Demand monthly price: 0.002800 USD x 730 hours in a month = 2.044000 USD
Breakeven percentage: 0.876000 USD / 2.044000 USD = 0.42857142857142857
Breakeven point: 0.42857142857142857 x 730 hours in month = 312.857143 hours

Utilization summary

For instance utilization over the breakeven point, 312.857143 hours, it is more cost effective to choose EC2 Instance Savings Plans instances than On-Demand Instances.

1 EC2 Instance Savings Plans instances x 0.000000 upfront cost = 0.000000 USD

EC2 Instance Savings Plans instances (upfront): 0.000000 USD

1 instances x 730 hours in a month = 730 EC2 Instance Savings Plans instance hours per month
730 EC2 Instance Savings Plans instance hours per month x 0.001200 USD = 0.876000 USD

Normalized EC2 Instance Savings Plans instances (monthly): 0.876000 USD

0 On-Demand instance hours per month x 0.002800 USD = 0.000000 USD

On-Demand (monthly): 0.000000 USD

0.000000 USD On-Demand (monthly) + 0.876000 USD Normalized EC2 Instance Savings Plans instances (monthly) = 0.876000 USD

Total cost (monthly): 0.876000 USD

**Please note that you will pay an hourly commitment for Savings Plans and your usage will be accrued at a discounted rate against this commitment.*

Outbound Data Transfer

Enter the data you expect to transfer out of Asia Pacific (Mumbai)

Data transfer to	Enter Amount	Data amount
Internet (0.08 USD - 0.11 U… ▼	1	GB per month ▼

Add outbound data transfer

▼ Show calculations

Unit conversions

Inbound:

Internet: 1 TB per month x 1024 GB in a TB = 1024 GB per month

Pricing calculations

Inbound:
Internet: 1024 GB x 0 USD per GB = 0.00 USD
Intra region:
(1 GB x 0.01 USD per GB outbound) + (1 GB x 0.01 USD per GB inbound) = 0.02 USD
Outbound:
Internet: 1 GB x 0.1093 USD per GB = 0.11 USD
Data Transfer cost (monthly): 0.13 USD

▼ Data transfer - ***optional***

Inbound Data Transfer

Enter the data you expect to transfer into Asia Pacific (Mumbai)

Data transfer from	Enter Amount	Data amount
Internet (free) ▼	1	TB per month ▼

Add inbound data transfer

Intra-Region Data Transfer

Enter the data you expect to transfer between Availability Zones or VPC Peering connections in Asia Pacific (Mumbai)

Enter Amount	Data amount
1	GB per month ▼

Costing Difference only in terms of Region:

Service Name	Status	Upfront cost	Monthly cost	Description	Region	Config Summary
Amazon Inspector	-	0.00 USD	16.33 USD	-	Asia Pacific (Mum...	Average* No. of EC2...
Amazon Inspector	-	0.00 USD	13.53 USD	-	US West (Oregon)	Average* No. of EC2...
Amazon Inspector	-	0.00 USD	17.84 USD	-	South America (S...	Average* No. of EC2...

* US West (Oregon) Region provides cheapest AWS services.
* South America (Sao Paulo) Region provides priciest AWS services

Exported Report of Monthly Estimation by AWS Price Calculator:

aws

Contact your AWS representative: Contact Sales

Export Date: 12/16/2024 **Language:** English

Estimate url

Estimate summary

Upfront cost	Monthly cost	Total 12 months cost
0.00 USD	54.76 USD	657.12 USD Includes upfront cost

Detailed Estimate

Name	Group	Region	Upfront cost	Monthly cost
	-		0.00 USD	0.00 USD
Status	-			
Description:	-			
Config summary				

Name	Group	Region	Upfront cost	Monthly cost
Amazon Inspector	-	Asia Pacific (Mumbai)	0.00 USD	16.33 USD
Status	-			
Description:	-			
Config summary	Average* No. of EC2 instances scanned per month (10), Total number of newly pushed container images per month (5), Total number of automated rescans per image per month (2), Average number of Lambda functions scanned in a month (1), Total number of newly pushed container images per month (2)			

Name	Group	Region	Upfront cost	Monthly cost
AWS Lambda	-	Asia Pacific (Mumbai)	0.00 USD	0.00 USD
Status	-			
Description:	-			
Config summary	Architecture (x86), Architecture (x86), Invoke Mode (Response stream), Amount of ephemeral storage allocated (680 MB), Number of requests (1000000 per month)			

Name	Group	Region	Upfront cost	Monthly cost
Amazon Elastic Block Store (EBS)	-	Asia Pacific (Mumbai)	0.00 USD	4.06 USD
Status	-			
Description:	Ec2 Config			
Config summary	Number of volumes (1), Average duration each instance runs (720 hours per month), Storage amount per volume (20 GB), Snapshot Frequency (Daily), Amount changed per snapshot (2 GB)			

Name	Group	Region	Upfront cost	Monthly cost
Amazon CloudWatch	-	Asia Pacific (Mumbai)	0.00 USD	3.00 USD
Status	-			
Description:	-			
Config summary	Number of Metrics (includes detailed and custom metrics) (10), GetMetricData: Number of metrics requested (3), GetMetricWidgetImage: Number of metrics requested (3), Number of other API requests (50)			

Name	Group	Region	Upfront cost	Monthly cost
Amazon Inspector	-	US West (Oregon)	0.00 USD	13.53 USD
Status	-			
Description:	-			
Config summary	Average* No. of EC2 instances scanned per month (10), Total number of newly pushed container images per month (5), Total number of automated rescans per image per month (2), Total number of newly pushed container images per month (2), Average number of Lambda functions scanned in a month (1)			

Name	Group	Region	Upfront cost	Monthly cost
Amazon Inspector	-	South America (Sao Paulo)	0.00 USD	17.84 USD
Status	-			
Description:	-			
Config summary	Average* No. of EC2 instances scanned per month (11), Total number of newly pushed container images per month (5), Total number of automated rescans per image per month (2), Total number of newly pushed container images per month (2), Average number of Lambda functions scanned in a month (1)			

Acknowledgement

Done an Instance Cost Analysis:

Instance Cost Analysis

Instance Type	vCPU	RAM	Cost/Monthly (No Upfront) -1 Year Commitment	On-Demand Hourly Cost
t3.large	2	8 GiB	38.11/Month	0.0832
m4.large	2	8 GiB	45.26/Month	0.1
c4.xlarge	4	7.5 GiB	91.98/Month	0.199
t2.medium	2	4 GiB	20.95/Month	0.0464
t2.xlarge	4	16 GiB	83.95/Month	0.1856
m5.xlarge	4	16 GiB	88.33/Month	0.192
t3.large	2	8 GiB	38.11/Month	0.0832
t3.medium	2	4 GiB	19.05/Month	0.0416
m5.large	2	8 GiB	43.80/Month	0.096
c5.2xlarge	8	16 GiB	156.22/Month	0.34
m5.large	2	8 GiB	43.80/Month	0.096
t2.large	2	8 GiB	41.98/Month	0.0928
t3a.xlarge	4	16 GiB	68.84/Month	0.1504
t2.medium	2	4 GiB	20.95/Month	0.0464
t2.large	2	8 GiB	41.98/Month	0.0928
c5.xlarge	4	8 GiB	78.11/Month	0.17
t3a.medium	2	4 GiB	17.23/Month	0.0376
			Total: 847.26 USD/Month	
			Total 12 months cost 10,167.12 USD	

Some Facts about instances:

1) Amazon Web Services (AWS) offers seven types of instances:
    i) **General Purpose**: A balance of compute, memory, and networking resources. These instances are good for applications that use these resources equally, like web servers and code repositories.
    ii) **Compute Optimized.**
    iii) **Memory Optimized.**
    iv) **Accelerated Computing.**
    v) **Storage Optimized.**
    vi) **High-Performance Computing.**
    vii) **Burstable Performance**.

2) **Amazon Elastic Compute Cloud (Amazon EC2)** has over **750 instances**.

3) Costliest EC2 instance is **7in-32tb.224xlarge**.

4) Cheapest EC2 instance is **t4g.nano.**

5) The number of instances that can be run on an AWS account is **limited to 20 per region** by default. To run more than 20 instances in one region, you need to get approval from Amazon.

6) The AWS Pricing Calculator currently only estimates service costs in USD.