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1. What are the various Compute services of AWS?

Ans: Various Compute services of AWS are:

1. **Amazon EC2:** Amazon Elastic Compute Cloud is a web service that provides choice of latest processor, storage, networking, operating system, to help us best match of our workload.
2. **Amazon ECS:** Amazon Elastic Container Service. It is highly scalable and has fast container management service.
3. **Amazon EKS:** Amazon Elastic Kubernetes Service makes Kubernetes create and operate easily on AWS.
4. **Amazon Lightsail:** A Virtual Private Server(VPS). Used for beginners or students as it provides everything you need to build an application or a website.
5. **AWS Batch:** It manages compute environments and job queues.
6. **AWS Lambda(Serverless):** It runs code in response to events and automatically manages the underlying compute resources for you.
7. What are the different instance types and pricing plans in AWS EC2?

Ans: Different instance types are:

1. **General Purpose:** These instances are used when user wants a balance of compute, memory and networking resources and can be used for variety of workloads.
2. **Compute Optimized:** Batch processing workloads, media transcoding, high speed web servers, high performance computing (HPC), scientific modelling, dedicated gaming servers and ad server engines, machine learning inference, and other compute-intensive applications are all well suited for instances from this family.
3. **Memory Optimized:** For workloads that process big data sets in memory, memory-optimized instances are made to execute quickly.
4. **Accelerated Computing:** Compared to software operating on CPUs, accelerated computing instances use hardware accelerators, or co-processors, to execute tasks like floating point number calculations, graphics processing, or data pattern matching.
5. **Storage Optimized:** Compared to software operating on CPUs, accelerated computing instances use hardware accelerators, or co-processors, to execute tasks like floating point number calculations, graphics processing, or data pattern matching.
6. **HPC Optimized:** For running HPC workloads at scale on AWS, high performance computing (HPC) instances are designed specifically to provide the highest price performance. Applications that profit from high-performance processors, such as extensive, sophisticated simulations and deep learning workloads, are best served by HPC instances.

Different pricing plans are:

1. **On Demand:** In this arrangement, depending on the instances you select, there are no upfront costs and you only pay for compute capacity per hour or per second (only for Linux Instances). You only pay for the instances you use and can adjust your compute capacity to fit the needs of your application.
2. **Reserved:** You can save up to 75% on Amazon EC2 Reserved Instances when compared to the cost of On-Demand Instances. In specified Availability Zones, it also offers capacity reserve. Reserved Instances, as opposed to On-Demand Instances, can offer considerable savings for applications with predictable workload.
3. **Spot:** Unused EC2 instances are known as Amazon EC2 Spot Instances in the AWS cloud. Spot Instances can be purchased for up to 90% less than on-demand rates. Based on supply and demand, the Spot price of Amazon EC2 spot instances changes from time to time.
4. What is AMI and its different possibilities in AWS?

Ans: An instance can be launched using an Amazon Machine Image (AMI), which is a supported and updated image offered by AWS.

Different possibilities are:

Operating System

You can choose an AMI on the basis of the supported operating system (or OS) like Windows or Linux.

32-bit or 64-bit Architecture

This parameter is based on the architecture of your selected OS.

Region

This parameter is based on the selected region of the Amazon machine image that comprises regions, availability zones, and local zones. Each region operates in different geographical regions and is independent of each other.

Storage (EBS or Instance store)

This AMI parameter is based on the storage of the root device. Based on storage, AMIs are categorized as either of the following two types namely:

EBS-backed instances: In this case, the root device for an AWS instance – launched using AMI – is an Amazon EBS volume that has been created from Amazon EBS.

Instance store-backed instances: In this case, the root device for an AWS instance – launched using Ami – is an Amazon instance store volume that has been created from an Amazon S3 template.

1. What is Region, Availability Zone, Local Zone, AWS Outposts and AWS Wavelength?

Ans: **Region:** It is a separate geographic area.

**Availability Zone:** Availability Zones are multiple, isolated locations within each Region.

**Local Zone:** You can offer applications to end users that need single-digit millisecond latency by using AWS Local Zones, a form of AWS infrastructure deployment that places compute, storage, databases, and other select services closer to major population, industrial, and IT centres.

**AWS Outputs:** Outputs enable you to get access to information about resources within a stack.

**AWS Wavelength:** For developers to innovate and create a new class of applications, AWS Wavelength blends the high bandwidth and ultralow latency of 5G networks with AWS computation and storage capabilities.

**Experiment -1**

































