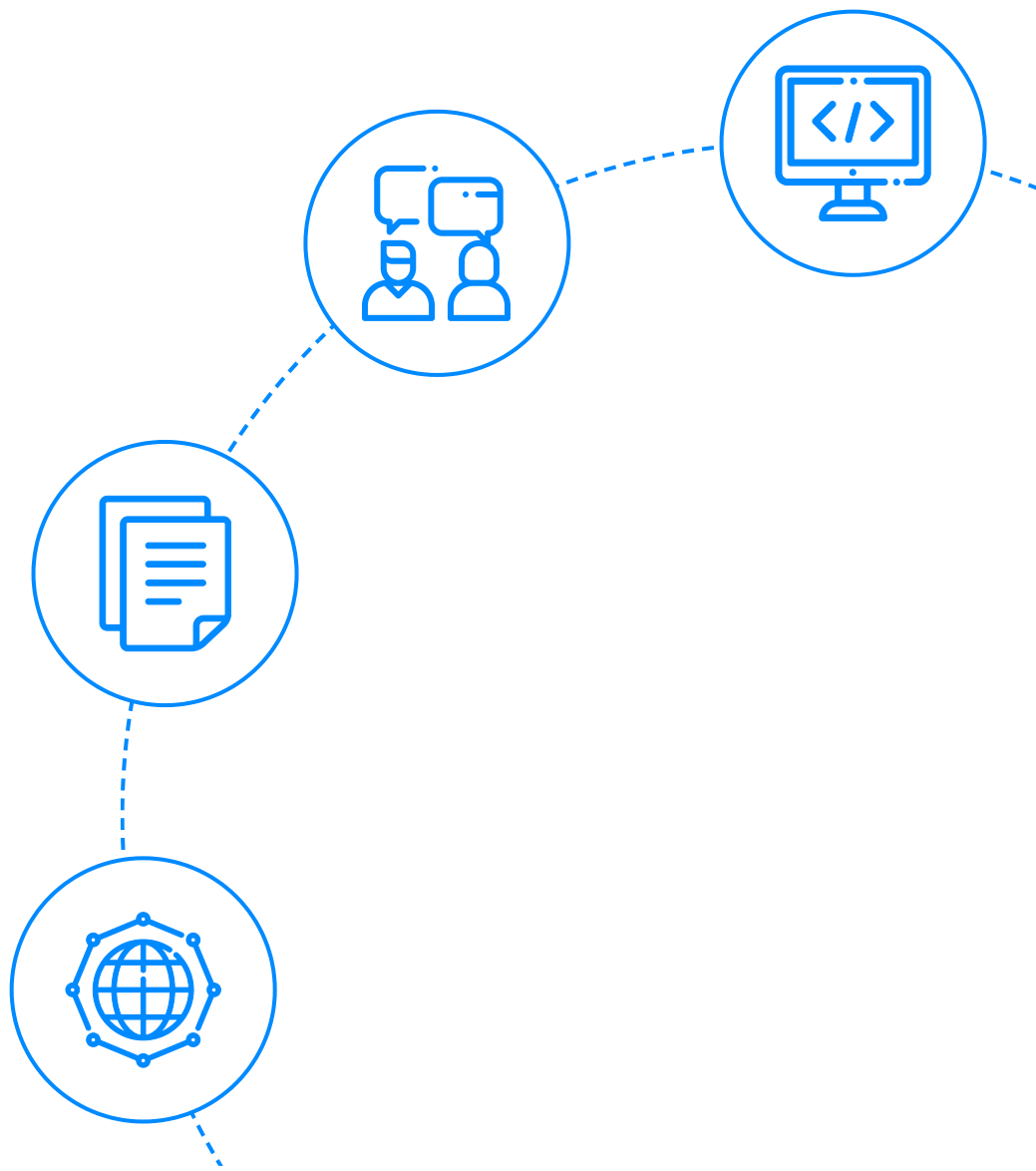# InterviewBit

AWS Cheat Sheet

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AWS Tutorial: Basics to Advanced

Let's get Started

Cloud computing, also known as serverless computing, is a technique that uses the internet to store and manage data on remote servers, and then allows users to access the data via the internet. Cloud computing customers do not own physical properties; they rent them out to third-party service providers.

Cloud services include on-demand self-service, broad network connectivity, resource sharing, and elasticity. Cloud computing has been so successful because of its simplicity in its usage. They are a cost-effective solution for enterprises. Optimal Server Utilisation, On-demand cloud services (satisfying clients), and Dynamic Scaling, among other things, are all included in this package. Google Cloud, for example, includes a suite of public cloud services offered by Google.

Types of Cloud:

- There are three cloud types: **Public, Private, and Hybrid**.
- The public cloud is where services provided by third-party vendors are available online.
- Private clouds are managed in-house or by third parties exclusively for a particular business.
- A hybrid cloud combines the features of both public and private clouds.

The sensitivity of the data and applications, industry certifications and standards, and other factors may determine whether to run services on public or private clouds.

What is AWS?

[Amazon Web Services](#), Inc. (AWS) provides cloud computing platforms and APIs to individuals, organisations, and governments. These web services offer distributed computing processing capacity and software tools via AWS server farms. Amazon Elastic Compute Cloud (EC2), on which users can create a virtual cluster of computers at any time, provides computing resources that mimic almost all of a real computer's attributes, including hardware central processing units (CPUs) and graphic processing units (GPUs). It includes local/RAM memory, hard-disk/SSS storage, operating systems, networking, and preloaded application software such as web servers, databases, and customer relationship management (CRM).
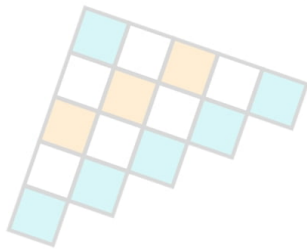
AWS Tutorial: Basics to Advanced

1. Compute

Category	Service	Description
Instances(Virtual machines)	EC2	Web-scale cloud computing is simplified using It.
	EC2 Spot	Up to 90% off fault-tolerant workloads are run by using this.
	EC2 Autoscaling	To meet changing demand, automatically add or remove compute capacity.
	Lightsail	To create & operate a virtual private server with AWS using the simplest method available. A cloud platform that includes everything you need to create an application or website.
	Batch	Allows developers, scientists, and engineers to create and run hundreds of thousands of batch processing jobs on Amazon Web Services (AWS)

2. Storage

Service	Description
AWS S3	S3 is a distributed database that is connected to every device in the network through the Internet. It uses a peer-to-peer model, meaning that data is not stored on a central server. Instead, data is stored directly between the user and the service that the user is trying to access. This provides a faster and more reliable service than a traditional database would because it does not have to be transferred when a change is made.
AWS Backup	AWS Backup automates the entire backup process from storage to delivery — removing the need to manually input and process backup data. It provides end-to-end encryption of your backup data to help keep your data secure. AWS Backup is a highly efficient and cost-effective way to protect your business data.
Amazon EBS	Amazon Elastic Block Store provides block-level storage volumes. These storage volumes are created and managed from the web service's dashboard and can be used to backup your application data and store your logs. By providing storage volumes for your applications, you can create a controlled, low-cost way to backup your application data and store your application logs in the cloud. You can also use the Elastic Block Store as a way to automatically rotate your application data to prevent data loss in the case of a hard or software failure.

3. Database

Database type	Use cases	Service	Description
Relational	Ecommerce websites, Traditional sites etc.	Aurora, Redshift, RDS	RDS enables you to easily set up, control, and scale a relational database in the cloud.
Key-value	Ecommerce Websites, gaming websites etc.	DynamoDB	DynamoDB is a highly-scalable, real-time database that provides advanced features such as automati ETL (Extract, Transform, Load) and real-time analytics. It is als a non-relational database, which means it does no store query results.DynamoD is engineered wit low latency and high availability i mind. It combine the scalability an performance of a database with th flexibility of a JavaScript application store

4. Developer Tools

Service	Description
Cloud9	Cloud9 is a cloud-based IDE that allows developers to write, run, and debug code.
CodeArtifact	CodeArtifact is a secure storage, publishing, and sharing of software code packages used in a development process organisation's software development. CodeArtifact makes it easy for small organisations to store, publish, and share software packages.
CodeBuild	CodeBuild is a code creation service that also produces code artefacts upon request.
CodeGuru	CodeGuru is a machine learning tool that recommends improved code quality and safe code by analysing the frequency of certain lines of code.
Cloud Develo-pment Kit	AWS CDK is an open source software development framework that defines cloud application resources using familiar programming languages.
CodeCommit	CodeCommit is a Git repository service that supports storing and managing Git archives on the Amazon Web Services cloud with CodeCommit.
CodeDeploy	CodeDeploy, a professionally managed deployment service, automates software installations on a variety of EC2, Fargate, Lambda, and on-premises servers.
CodePipeline	CodePipeline is a high-quality, automated release pipeline that helps automate app and

5. Network and Content Delivery

Use Case	Service	Description
Build a cloud network	VPC	VPC lets you provision a logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define.
	Transit Gateway	Transit Gateway simplifies network and peering relationships by connecting VPCs & on-premises networks through a central hub.
	PrivateLink	PrivateLink is a great way to securely connect your on-premises workloads with the cloud, while still maintaining full control over who can access your data and application. You can use PrivateLink to securely connect your on-premises data center to your AWS data lake, while providing the full tenant control and regulatory compliance of an on-premises data center.

6. Security, Identity, & Compliance

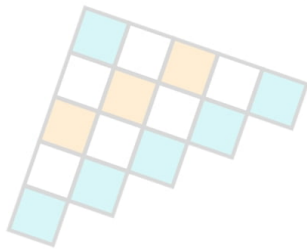| Category	Service	Description
Identity & access management	Identity & Access Management (IAM)	IAM provides secure and controlled access to AWS services.
	Single Sign-On	SSO simplifies, manages, and provides access to AWS accounts & business applications.
	Cognito	Cognito helps in storing user sign-up data in the same database as your other web & mobile app data and manage user access controls such as read permissions, roles, and identity management
	Directory Service	AWS Managed Microsoft Active Directory (MMAD) enables you to use Active Directory across your entire enterprise with an emphasis on security and regulatory compliance.

7. Migration & Transfer services

Service	Description
Migration Evaluator	To start using AWS, you need to first build a case for why the service is useful to your organisation. An easy way to do that is to build a Migration Evaluator, which is a detailed analysis of your current infrastructure and recommendations for how to best move forward.
Migration Hub	The migration hub tracks each app's effort to migrate to a new solution, such as a new solution release or a new partner. The migration hub not only tracks the app's progress toward its goal, but records each action taken to get the app to the new solution, such as uploading a new solution package. Migration Hub includes an easy-to-use dashboard for monitoring the progress of each app's migrations. Once you've set up the dashboard, you can view the status of each migration and any action taken to get the app to the new solution. You can also view a list of all partners the app is connected to and view the progress of each partner's migration.
Applic- ation Discovery Service	The service makes it easier for enterprises to collect data, analyse it, and create insight with real-time dashboarding that visualises data-driven decisions. By using AI and machine learning to predict user behaviour, businesses can save time and money by eliminating unplanned outages and rework caused by changes to app or IT servers.

8. Cost Management

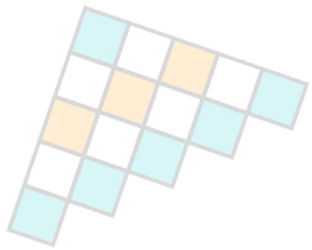| Use Cases	Capabilities	Description
Organize	Construct cost allocation & governance foundation with your own tagging strategy	Cost Categories helps you to segment your AWS platform and process usage data to better understand costs and develop cost-effective infrastructure and operations.
Report	Provide users with information about their cloud costs by providing detailed allocable cost data	You can use this report to get a quick and detailed view of the AWS ecosystem and its infrastructure. You can also use this report to get a deeper understanding of AWS services and their cost & usage. You can use this data to help you make informed decisions about which AWS services to use and which to ignore. You can also use the data to make customized reports. This data is publicly available and made freely available by the AWS Repo. The AWS Repo is the primary source of this data, and the data is updated frequently.

9. SKDs and Toolkits

Service	Description
CDK	It was designed to solve the common problem of building mobile apps with a low level of abstraction. This reduces the need to manually code up elaborate logic and keeps the focus on developing apps using high-level language features. Familiarity with the syntax of your favorite language increases the ease of use of your app, as well as its chances of adoption by users. The more familiar your audience with your app, the more likely they are to install it.
Corretto	It is a free and open source software distribution, which can be used for both desktop and mobile apps. The goal of the project is to make it as compact and lightweight as possible, while at the same time striking a balance between speed and power. The project is led by SBase, an open source Java project, and collaborates with the other major OpenJDK project members
Crypto Tools	The AWS Crypto Tools libraries help you do your research andSolidity, Serpent, or Vyper are examples of popular JavaScript cryptographics libraries. The AWS Crypto Tools libraries are based on the open source Shepherds project. Shepherds is a widely-used and well-regarded implementation of the Diffie-Helman key-exchange algorithm in the Go programming language.

10. Data Lakes & Analytics

Category	Service	Description
Analytics	Athena	Athena is a free service with no ads or hidden charges. You can use this service to analyze your data in real-time or query past data with a predefined set of rules. You can also run reports and drill-downs that let you explore data in more detail. When using Athena, don't limit yourself to looking at the numbers. Think about what you're analyzing and find a way to make sense of the data.
	EMR	EMR is a data management engine that helps enterprises collect and analyze data from their data warehouses and other sources. It provides a common platform for data collection and analysis, and can be used to create real-time and historical reports. The term EMR is also used to refer to any software or platform that provides a similar set of benefits.

11. Containers

Use Cases	Service	Description
Store, encrypt, and manage container images	ECR	Refer to the compute section. It has already been explained there.
Run contai-nerized applic-ations or build micros-ervices	ECS	Refer to the compute section. It has already been explained there.
Manage containers with Kubernetes	EKS	Refer to the compute section. It has already been explained there.
Run containers without managing servers	Fargate	The Fargate stack consists of a number of components which work together to create a highly available, low-cost, and secure business-grade application. It is designed to work with both ECS & EKS. We will cover the different components of the Fargate stack and the best practices to maintain a successful Fargate stack.

12. Serverless

Category	Service	Description
Compute	Lambda	Lambda is a cloud-based service that functions as a sort of middleman. Data flows through the middleman and is processed at a data centre of your choice. The code running on the server is only responsible for processing request data, not generating it. This code is called the "backend" and is what most people think of when they think of "serverless." It's not a "server" at all. The code running on the serverless platform is purely "blackbox" in that it does not know what data it receives and it does not manage or store any of the data it receives or emit any data of its own. The backend code receives requests from clients and processes them accordingly.
	Lambda-@Edge	Amazon CloudFront provides Lambda@Edge, which allows you to run code closer to users of your application, which improves performance and reduces latency.

13. Application Integration

Category	Service	Integration
Messaging	SNS	Reliable high- throughput pub/sub, SMS, email, and mobile push notifications
	SQS	Application companies may use a message queue that send, store, and receive messages between application parts at any volume to send, store, and retrieve messages between application parts.
	MQ	The broker that allows for easy and hybrid architectures in Apache ActiveMQ is what makes migrating easy and hybrid architectures possible.

14. Management and Governance

Category	Service	Description
Enable	Control Tower	The simplest method to set up and govern a new, secure Multi-account AWS environment
	Organi-zations	As your AWS workloads grow and scale, organizations can assist in centrally governing the environment by helping to centralise governing operations.
	Well-Arch-itected Tool	Well-architected means that the resources and data are properly separated and accessed sequentially, with low latency between requests. You can use the well-architected tool to help determine if your workloads are well-architected and to monitor their performance and scalability. When you have well-architected apps, you can focus on building great experiences, not infrastructure.
	Budgets	To track costs and usage in specific applications, budgets allow for precise control.

Conclusion

The AWS Well-Architected Framework provides a set of standards that helps you build a scalable, secure, and efficient cloud infrastructure. The AWS Well-Architected Framework consists of best practices for the architecture of the cloud systems and processes. It does not limit itself to creating a structure for a set of functions and resources. It is also a process that you can iterate. AWS provides a set of tools for the analysis, planning, and building of cloud systems. We've provided the Cheat Sheet for AWS. Now, it's time for you to head out and try what we've covered here and more.

Useful Resources

- https://www.interviewbit.com/blog/aws-projects/
- https://www.interviewbit.com/blog/aws-salary-in-india/
- https://www.interviewbit.com/blog/cloud-computing-projects/
- https://www.interviewbit.com/technical-interview-questions/

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