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AWS Services and Service Categories
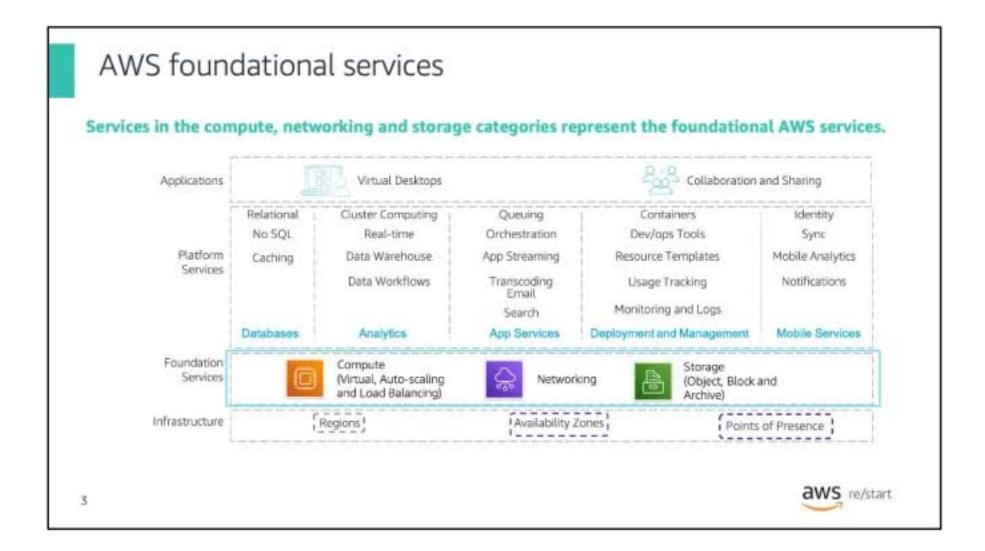
What you will learn

At the core of the lesson

You will learn how to identify AWS services and service categories.

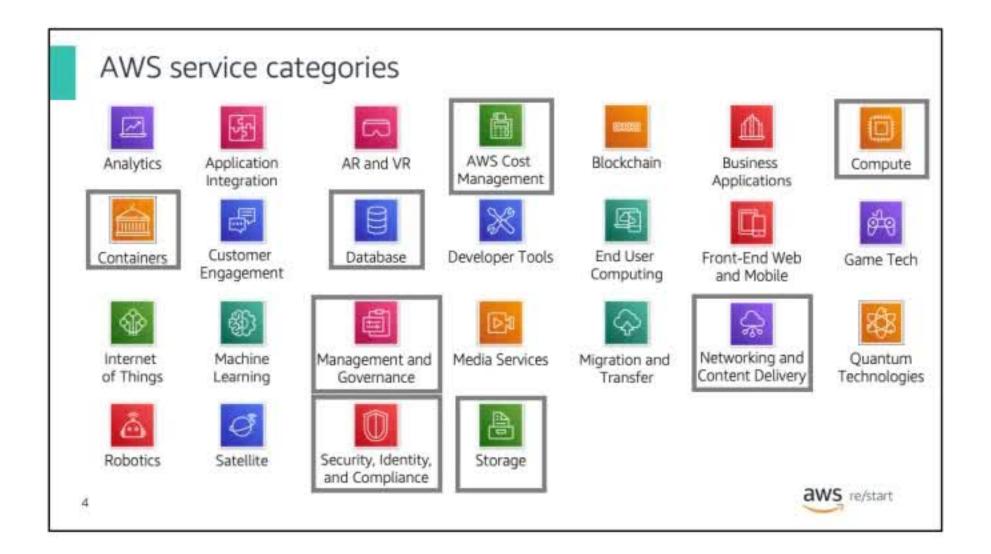After completing this module, you should be able to identify AWS services and service categories

AWS foundational services

Services in the compute, networking and storage categories represent the foundational AWS services.

Applications		Virtual Desktops			Collaboration and Sharing	
Platform Services	Relational No SQL Caching	Cluster Computing Real-time Data Warehouse Data Workflows	Queuing Orchestration App Streaming Transcoding Email Search	Containers Dev/ops Tools Resource Templates Usage Tracking Monitoring and Logs	Identity Sync Mobile Analytics Notifications	
	Databases	**Analytics**	**App Services**	**Deployment and Management**	**Mobile Services**	
Foundation Services		Compute (Virtual, Auto-scaling and Load Balancing)		Networking	Storage (Object, Block and Archive)	
Infrastructure		Regions	Availability Zones		Points of Presence	

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The AWS Global Infrastructure supports a broad set of services that are delivered as an on-demand utility. Many of these services are available in seconds, with pay-as-you-go pricing. At the core of these services, the **Compute**, **Networking**, and **Storage** categories are foundational.

The next slides introduce you to some of the key services in these foundational categories.

AWS service categories

Analytics · Application Integration · AR and VR · AWS Cost Management · Blockchain · Business Applications · Compute · Containers · Customer Engagement · Database · Developer Tools · End User Computing · Front-End Web and Mobile · Game Tech · Internet of Things · Machine Learning · Management and Governance · Media Services · Migration and Transfer · Networking and Content Delivery · Quantum Technologies · Robotics · Satellite · Security, Identity, and Compliance · Storage

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AWS offers a broad set of cloud-based services in many different product or service categories. Each category consists of one or more services. This course won't introduce you to each service. Instead, the focus of this course is on the most widely used services, which provide a good introduction to the AWS Cloud. This course also focuses on services that are more likely to be covered in the AWS Certified Cloud Practitioner exam.

The categories that this course will discuss are highlighted on the slide: AWS Cost Management; Compute; Containers; Database; Management and Governance; Networking and Content Delivery; Security, Identity, and Compliance; and Storage.

To learn more about AWS offerings, refer to the AWS Cloud Products page. All AWS offerings are organized into service categories. For example, if you choose **Compute**, Amazon Elastic Compute Cloud (Amazon EC2) is the first service on the list. The Compute category also lists other products and services.

If you choose **Amazon EC2**, the Amazon EC2 page opens. Each product page provides a detailed description of the product and lists some of its benefits.

Explore the different service groups to understand the categories and services

in them. Now that you know how to locate information about different services, this module will discuss the highlighted service categories. The next slides list the individual services—that are each in highlighted category—that this course will discuss.

Storage service category

AWS Storage services

Amazon Simple Storage Service (Amazon S3)

Amazon Elastic Block Store (Amazon EBS)

Amazon Elastic File System (Amazon EFS)

Amazon Simple Storage Service Glacier

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AWS storage services include the services listed here, and many others.

Amazon Simple Storage Service (Amazon S3) is an object storage service that offers scalability, data availability, security, and performance. Use it to store and protect any amount of data for websites, mobile apps, backup and restore, archive, enterprise applications, Internet of Things (IoT) devices, and big data analytics.

Amazon Elastic Block Store (Amazon EBS) is high-performance block storage that is designed for use with Amazon EC2 for both throughput-intensive and transaction-intensive workloads. It's used for a range of workloads, such as relational and non-relational databases, enterprise applications, containerized applications, big data analytics engines, file systems, and media workflows.

Amazon Elastic File System (Amazon EFS) provides a scalable, fully managed elastic Network File System (NFS) file system for use with AWS Cloud services and on-premises resources. It's built to scale on demand to petabytes, growing and shrinking automatically as you add and remove files. It reduces the need to provision and manage capacity to accommodate growth.

Amazon Simple Storage Service Glacier is a secure, durable, and low-cost Amazon S3 cloud storage class for data archiving and long-term backup. It is designed to deliver 11 9s (99.999999999 percent) of durability, and to provide comprehensive security and compliance capabilities to meet stringent regulatory requirements.

Compute service category

Photo from https://www.pexels.com/photo/technology-computer-lines-board-58711/

AWS Compute services

Amazon EC2

Amazon EC2 Auto Scaling

AWS Elastic Beanstalk

AWS Lambda

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AWS compute services include the services listed here, and many others.

Amazon Elastic Compute Cloud (Amazon EC2) provides resizable compute capacity as virtual machines in the cloud.

Amazon EC2 Auto Scaling enables you to automatically add or remove EC2 instances according to conditions that you define.

AWS Elastic Beanstalk is a service for deploying and scaling web applications and services on familiar servers such as Apache HTTP Server and Microsoft Internet Information Services (IIS).

AWS Lambda enables you to run code without provisioning or managing servers. You pay only for the compute time that you consume, so you won't be charged when your code isn't running.

Containers service category

AWS Containers services

Amazon Elastic Container Service (Amazon ECS)

Amazon Elastic Container Registry

Amazon Elastic Kubernetes Service (Amazon EKS)
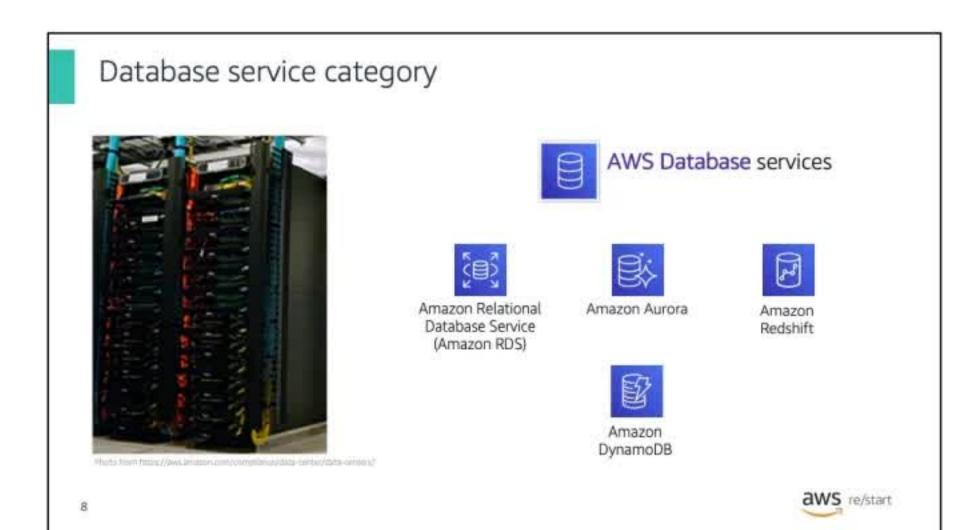
AWS Fargate

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AWS containers services include the services listed here, and many others.

Amazon Elastic Container Service (Amazon ECS) is a highly scalable, high-performance container orchestration service that supports Docker containers.

Amazon Elastic Container Registry (Amazon ECR) is a fully managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images.

Amazon Elastic Kubernetes Service (Amazon EKS) makes it easy to deploy, manage, and scale containerized applications that use Kubernetes on AWS.

AWS Fargate is a compute engine for Amazon ECS that enables you to run containers without managing servers or clusters.

Database service category

AWS Database services

Amazon Relational Database Service (Amazon RDS)

Amazon Aurora

Amazon Redshift

Amazon DynamoDB

Photo from https://aws.amazon.com/compliance/data-center/data-centers/

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AWS database services include the services listed here, and many others.

Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides resizable capacity while automating time-consuming administration tasks, such as hardware provisioning, database setup, patching, and backups.

Amazon Aurora is a relational database that's compatible with MySQL and PostgreSQL. It's up to five times faster than standard MySQL databases and three times faster than standard PostgreSQL databases.

Amazon Redshift enables you to run analytic queries against petabytes of data that's stored locally in Amazon Redshift. You can also run queries directly against exabytes of data that's stored in Amazon S3. It delivers fast performance at any scale.

Amazon DynamoDB is a key-value and document database that delivers single-digit millisecond performance at any scale, with built-in security, backup and restore, and in-memory caching.

Networking and Content Delivery service category

AWS Networking and Content Delivery services

Amazon Virtual Private Cloud (Amazon VPC)

Elastic Load Balancing

Amazon CloudFront

AWS Transit Gateway

Amazon Route 53

AWS Direct Connect

AWS VPN

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AWS networking and content delivery services include the services listed here, and many others.

Amazon Virtual Private Cloud (Amazon VPC) enables you to provision logically isolated sections of the AWS Cloud.

Elastic Load Balancing automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, and Lambda functions.

Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and application programming interfaces (APIs) to customers globally, with low latency and high transfer speeds.

AWS Transit Gateway is a service that enables customers to connect their virtual private clouds (VPCs) and their on-premises networks to a single gateway.

Amazon Route 53 is a scalable, cloud Domain Name System (DNS) web service that's designed to give you a reliable way to route end users to internet applications. It translates names (like *www.example.com*) into the numeric IP addresses (like *192.0.2.1*) that computers use to connect to each other.

AWS Direct Connect provides a way to establish a dedicated private network connection from your data center or office to AWS, which can reduce network costs and increase bandwidth throughput.

AWS VPN provides a secure private tunnel from your network or device to the AWS global network.

Security, Identity, and Compliance service category

AWS security, identity, and compliance services include the services listed here, and many others.

AWS Identity and Access Management (IAM) enables you to manage access to AWS services and resources securely. By using IAM, you can create and manage AWS users and groups. You can use IAM permissions to allow and deny user and group access to AWS resources.

AWS Organizations allows you to restrict what services and actions are allowed in your accounts.

Amazon Cognito lets you add user sign-up, sign-in, and access control to your web and mobile apps.

AWS Artifact provides on-demand access to AWS security and compliance reports and select online agreements.

AWS Key Management Service (AWS KMS) enables you to create and manage keys. You can use AWS KMS to control the use of encryption across a wide range of AWS services and in your applications.

AWS Shield is a managed distributed denial of service (DDoS) protection service that safeguards applications running on AWS.

AWS cost management services include the services listed here, and others.

The AWS Cost and Usage Report contains the most comprehensive set of AWS cost and usage data available, including additional metadata about AWS services, pricing, and reservations.

AWS Budgets enables you to set custom budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount.

AWS Cost Explorer has an easy-to-use interface that enables you to visualize, understand, and manage your AWS costs and usage over time.

Management and Governance service category

AWS Management and Governance services

AWS Management Console | AWS Config | Amazon CloudWatch | AWS Auto Scaling

AWS Command Line Interface | AWS Trusted Advisor | AWS Well-Architected Tool | AWS CloudTrail

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AWS management and governance services include the services listed here, and others.

The AWS Management Console provides a web-based user interface for accessing your AWS account.

AWS Config provides a service that helps you track resource inventory and changes.

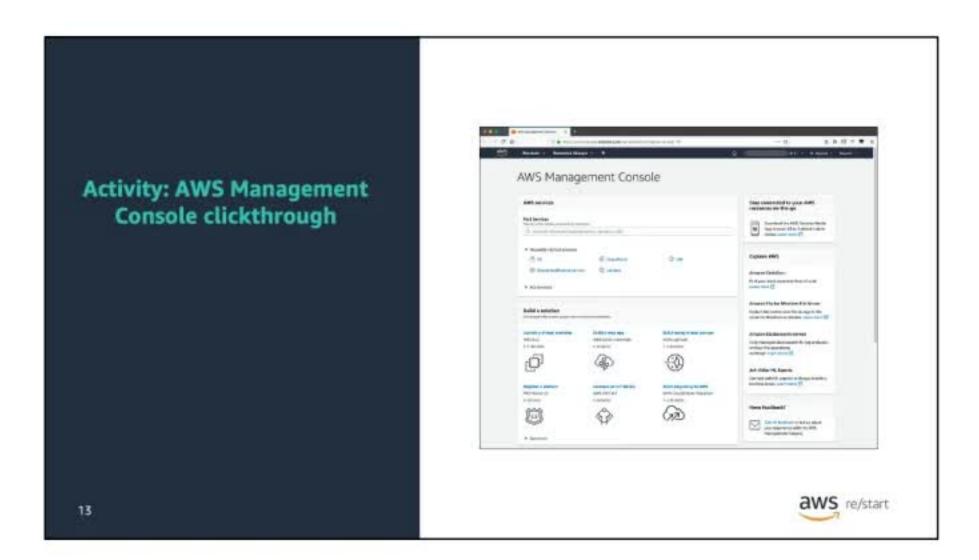**Amazon CloudWatch** enables you to monitor resources and applications.

AWS Auto Scaling provides features that allow you to scale multiple resources to meet demand.

AWS Command Line Interface provides a unified tool to manage AWS services.

AWS Trusted Advisor helps you optimize performance and security.

AWS Well-Architected Tool provides help in reviewing and improving your workloads.

AWS CloudTrail tracks user activity and API usage.

In this educator-led activity, you will log in to the AWS Management Console. The activity instructions are on the next slide. You will be challenged to answer five questions. The educator will lead the class in a discussion of each question, and reveal the correct answers.

Hands-on activity: AWS Management Console clickthrough

1. Launch the **Sandbox** hands-on environment and connect to the **AWS Management Console.**
2. Explore the AWS Management Console.
    A. Choose the **Services** menu.
    B. Notice how services are grouped into service categories. For example, the **EC2** service appears in the **Compute** service category.

        Question #1: Which service category is the **IAM** service in?

        Question #2: Which service category is the **Amazon VPC** service in?
    C. Choose the **Amazon VPC** service. In the top-right corner, notice that the dropdown menu displays an AWS Region (for example, it might display *N. Virginia*).
    D. Choose the **Region** menu and switch to a different Region. For example, choose **EU (London).**
    E. Choose **Subnets** (on the left of the screen). The Region has three subnets in it. Select one of the subnets. the In the bottom half of the screen, notice that it displays details about this subnet.

        Question #3: Does the subnet that you selected exist at the level of the Region or at the level of the Availability Zone?
    F. Choose **Your VPCs**. An existing VPC is already selected.

        Question #4: Does the VPC exist at the level of the Region or at the level of the Availability Zone?

        Question #5: Which services are global, instead of Regional? Check Amazon EC2, IAM, Lambda, and Route 53.

The purpose of this activity is to expose you to the AWS Management Console. You will gain experience navigating between AWS service consoles (such as the Amazon VPC console). You will also practice navigating to services in different service categories. Finally, the console will help you distinguish whether a given service or service resource is global or Regional.

Follow the instructions on the slide. After most or all students have completed the steps, the educator will review the questions and answers with the whole class.

Activity answer key

- **Question #1**: Which service category is the **IAM** service in?
    - Answer: Security, Identity, & Compliance

- **Question #2**: Which service category is the **Amazon VPC** service in?
    - Answer: Networking & Content Delivery

- **Question #3**: Does the subnet that you selected exist at the level of the Region or at the level of the Availability Zone?
    - Answer: Subnets exist at the level of the Availability Zone.

- **Question #4**: Does the VPC exist at the level of the Region or at the level of the Availability Zone?
    - Answer: VPCs exist at the Region level.

- **Question #5**: Which services are global, instead of Regional? Check Amazon EC2, IAM, Lambda, and Route 53.
    - Answer: IAM and Route 53 are global. Amazon EC2 and Lambda are Regional.

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This slide provides an answer key to the questions from the previous slide. The educator will use this slide to lead a discussion and debrief the hands-on activity.

Key takeaways

- AWS offers a broad set of **cloud-based services** that span multiple categories including the **Compute**, **Networking** and **Storage** categories.

- The AWS Management Console provides a simple web interface to allow you to **access and manage your AWS cloud resources**.

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Some key takeaways from this lesson include:

- AWS offers a broad set of cloud-based services that span multiple categories including the Compute, Networking, and Storage categories.

- The AWS Management Console provides a web interface for you to access and manage your AWS Cloud resources.