Glossary of Terms

Software

Application programming interface (API): A set of rules and protocols that define how different software applications can communicate and interact with each other. APIs make it possible to exchange and integrate data between systems.

Guest OS: The operating system (OS) of a virtual machine (VM).

Hypervisor: Software that gives an operating system the ability to run virtual machines on a single host.

Operating system (OS): A software program that manages and controls the resources and operations of a computer. The OS provides a user interface and facilitates the running of other software applications.

Process: An instance of a program or application that is currently running on a computer.

Thread: A single sequence of instructions within a process that can be executed independently. Threads make it possible to execute multiple tasks in a program concurrently, improving efficiency and responsiveness in multithreaded applications.

Virtual machine (VM): A virtual simulation of a physical computer that makes it possible for multiple operating systems or applications to run on a single physical machine. A VM provides isolation and flexibility in computing environments.

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Glossary of Terms

Hardware

Central Processing Unit (CPU): The primary component of a computer that's responsible for running instructions and performing calculations.

CPU cache: A small amount of memory that's located directly on the processor chip where the CPU stores frequently accessed data and instructions. The CPU cache reduces the time it takes for the CPU to retrieve information from memory.

Host: A computer or device that provides services or resources to other devices that are connected to a network.

Motherboard: The primary circuit board of a computer that connects and holds all the major components, including the CPU, RAM, storage devices, and expansion cards.

Multicore CPU: A CPU that contains multiple independent processing units, called cores, within a single physical package..

Network interface: A hardware or software component that connects a device to a computer network.

Persistent memory: Memory that retains stored data independently of when power is turned off or interrupted.

Random Access Memory (RAM): A type of computer memory that provides fast and temporary storage for data and instructions that are actively being used by the CPU.

Server: A computer or system that provides resources, services, or functionality to other computers, known as clients, over a network.

Volatile memory: Memory that loses its stored data when power is turned off or interrupted.

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Glossary of Terms

Web

Cascading Style Sheets (CSS): A style sheet language that describes the visual presentation and formatting of HTML elements. Developers use CSS to control the appearance and layout of webpages.

Domain: A human-readable name that serves as an identifier for a website or network resource (such as www.example.com).

Domain Name System (DNS): A decentralized system that translates domain names (such as www.example.com) into IP addresses.

Dynamic website: A website that offers personalized and interactive experiences by displaying customized content based on user interactions, database queries, or other dynamic data sources.

Hypertext Transfer Protocol (HTTP): A protocol used for transmitting and retrieving web content over the internet.

Hypertext Transfer Protocol Secure (HTTPS): A secure version of HTTP that uses encryption to protect the confidentiality and integrity of data transmitted between a web browser and a web server.

Hypertext Markup Language (HTML): The standard markup language used for creating and structuring webpages and applications. HTML defines the structure and presentation of content on the World Wide Web.

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Internet Protocol (IP) address: A unique identifier assigned to each device connected to a network. IP addresses allow proper addressing and communication between devices on the internet.

JavaScript (JS): A programming language that enables dynamic and interactive elements on websites. JS is used to provide enhanced user experiences and client-side scripting.

Localhost: A special hostname that refers to the current device or computer itself. By using localhost, applications and services can communicate with themselves on the same system, and don't need to connect to the internet or an external network.

Packet: A small unit of data that is transmitted between two devices over a network.

Port: A virtual gate that allows specific types of communication to enter or exit a computer. Different applications and services use ports to send and receive data through designated channels.

Remote Desktop Protocol (RDP): A protocol that allows users to connect remotely to a computer or server over a network. By using RDP, users can access and control the computer as if they were physically present at the machine.

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Web

Secure Shell (SSH): A protocol that allows users to connect remotely to and control another computer or server over a network. By using SSH, users can access and control the computer as if they were physically present at the machine.

Secure Sockets Layer (SSL): A communication protocol, or set of rules, that creates a secure connection between two devices or applications on a network.

Static website: A website that displays fixed content and is delivered to users as-is, without any server-side processing or dynamic elements.

Transmission Control Protocol/ Internet Protocol (TCP/IP): The set of protocols that governs the exchange of communications and data between devices on the internet.

Transport Layer Security (TLS): The upgraded version of SSL that fixes existing SSL vulnerabilities. TLS authenticates more efficiently and continues to support encrypted communication channels.

Web application server: A software framework or platform that hosts, manages, and supports web applications by using protocols, such as HTTP. A web application server handles requests, processes business logic, and delivers dynamic content to clients.

Web server: A specialized computer or software that delivers static webpages and content to clients over the internet by using protocols, such as HTTP.

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Glossary of Terms

General

Backend: The behind-the-scenes part of a website or application that runs on servers. Backend servers handle business logic and server-side operations, and they also process, store, and manage data.

Cache: A storage location that stores frequently access data and is designed to provide high-speed data retrieval.

Database: An organized collection of structured data that is stored and managed in a computer system. A database makes it possible to store, retrieve, and manipulate data efficiently for various applications and purposes.

Ephemeral: Another word that means temporary.

Frontend: The part of a website or application that users interact with directly.

Horizontal scaling: The practice of adding more servers or resources to a system to handle increased workloads by distributing the load across multiple machines, which results in improved performance and capacity.

Latency: The measure of time delay, or the amount of time it takes for data to travel from its source to its destination.

Latency affects the responsiveness and speed of network communication or data transmission in IT systems.

Load balancing: The process of distributing incoming network traffic across multiple backend servers or resources to optimize performance, maximize resource utilization, and facilitate the high availability of services.

Network: A collection of interconnected computers and devices that are linked together to facilitate communication, data, and resource sharing.

Vertical scaling: The practice of increasing the capacity or performance of a single server or resource by upgrading its hardware components or configuration so that it can handle larger workloads or demanding tasks.

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Glossary of Terms

Cloud

Amazon Elastic Compute Cloud (Amazon EC2): An AWS service that offers virtual servers in the cloud, so that users can configure and manage scalable computing resources.

Amazon Elastic Block Store (Amazon EBS): A service designed to provide persistent storage for Amazon Elastic Compute Cloud (Amazon EC2).

Amazon Elastic File Storage (Amazon EFS): An AWS storage service used to create and configure shared file systems for AWS compute services.

AWS Lambda: A serverless compute service that lets you run code for virtually any type of application or backend service without provisioning or managing servers.

Amazon Route 53: A scalable and highly available Domain Name System (DNS) web service provided by AWS.

Amazon Relational Database Service (Amazon RDS): A collection of managed services that makes it simple to set up, operate, and scale databases in the cloud.

Amazon Simple Storage Service (Amazon S3): A cloud-based storage solution provided by Amazon Web Services (AWS) that businesses and individuals can use to store and retrieve large amounts of data in a secure, scalable, and cost-effective manner.

Amazon Virtual Private Cloud (Amazon VPC): An AWS service that creates isolated, virtual networks in the cloud. Amazon VPC provides users with control over their network configuration.

Cloud: The on-demand delivery of IT resources over the internet with pay-as-you-go pricing.

Elastic Load Balancing (ELB): An AWS service that automatically distributes incoming application traffic across multiple targets (such as EC2 instances) to improve the availability, fault tolerance, and scalability of applications.

Serverless: A development model that allows you to build and run applications without having to manage servers.

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