TNGS LLC

TNGS Learning Solutions AWS Solutions Architect Online Course

Cloud Computing Models

Cloud Computing Models

- Cloud computing models refer to the various service and deployment models that define how cloud computing resources are delivered, managed, and accessed. These models are fundamental in understanding the different approaches to using cloud technology and the roles of both cloud providers and users.
- The two primary dimensions of cloud computing models are:
  - **Service Models**
  - **Deployment Models**

Cloud Computing Models

Service Models

Platform as a Service (PaaS) is a cloud computing service model that provides a platform and environment for developers to build, deploy, and manage applications without the complexity of underlying infrastructure management. In essence, PaaS abstracts much of the infrastructure-related work, allowing developers to focus primarily on coding, designing, and deploying applications.

Platform as a Service (PaaS)

Development Frameworks: PaaS platforms often offer a range of development frameworks, programming languages, and tools, making it easier for developers to create and test applications.

Platform as a Service (PaaS)

Abstraction of Infrastructure: PaaS abstracts infrastructure management tasks such as server provisioning, networking, and storage, simplifying the development process.

Platform as a Service (PaaS)

Automation: PaaS environments automate many aspects of application deployment and scaling, reducing the need for manual intervention.

Platform as a Service (PaaS)

Scalability: PaaS platforms provide mechanisms for automatically scaling applications to accommodate varying workloads and user demands.

Platform as a Service (PaaS)

Integrated Services: PaaS typically includes a variety of integrated services, such as databases, identity and access management, messaging, and more.

Platform as a Service (PaaS)

Web-Based Development: PaaS often offers web-based development tools and integrated development environments (IDEs) that facilitate collaborative coding and application testing.

Platform as a Service (PaaS)

Multi-Tenancy: PaaS environments are designed to support multiple users and applications within a shared infrastructure, promoting resource efficiency.

Common references of IaaS

Development Tools and Frameworks: PaaS platforms offer tools and frameworks tailored to specific programming languages and application types, simplifying the development process.

Common references of IaaS

Runtime Environment: PaaS provides a runtime environment where applications can be executed and managed. This environment abstracts the underlying infrastructure, including servers and operating systems.

Common references of IaaS

Database Services: PaaS platforms often include managed database services that allow developers to store and retrieve data without worrying about database server management.

Common references of IaaS

Middleware: Middleware services are used for building and managing application components, integrating with other services, and facilitating communication between application elements.

Common references of IaaS

Scalability and Load Balancing: PaaS environments enable automatic scaling of applications based on demand, often utilizing load balancers to distribute traffic.

Common references of IaaS

Development and Testing Tools: PaaS providers offer tools for code version control, testing, and debugging, streamlining the software development lifecycle.

Common use-cases of IaaS

Web Application Development: PaaS is well-suited for building web applications, as it provides the necessary development tools, runtime environments, and scalability features.

Common use-cases of IaaS

Mobile App Development: PaaS platforms offer tools and services for developing, testing, and deploying mobile applications across different platforms.

Common use-cases of IaaS

IoT (Internet of Things) Development: Developers use PaaS to build and manage IoT applications that require real-time data processing and device management.

Common use-cases of IaaS

Data Analytics and Big Data: PaaS environments support big data and analytics applications, offering the computational power and data storage required for data processing and analysis.

Common use-cases of IaaS

API Development and Integration: PaaS platforms facilitate the development of APIs (Application Programming Interfaces) and their integration into various applications and services.

Conclusion

An example of PaaS is AWS Elastic Beanstalk. Users choose PaaS based on their preferred development languages, tools, and application requirements, benefiting from reduced infrastructure management overhead and accelerated development cycles.