Introduction to Cloud System Architecture

Cloud System Architecture refers to the structural design and organization of hardware, software, networks, and services that support cloud computing. It enables on-demand access to shared resources and services over the internet with scalability, flexibility, and efficiency.

Key Characteristics

- On-demand self-service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service

Cloud Service Models

1. **Infrastructure as a Service (IaaS):** Provides virtualized computing resources such as servers, storage, and networking.
2. **Platform as a Service (PaaS):** Offers hardware and software tools over the internet, primarily for application development.
3. **Software as a Service (SaaS):** Delivers software applications over the internet on a subscription basis.

Cloud Deployment Models

- **Public Cloud:** Services offered over the public internet and shared across organizations.
- **Private Cloud:** Cloud infrastructure operated solely for a single organization.
- **Hybrid Cloud:** Combination of public and private clouds, allowing data and applications to be shared between them.

Core Components

- Compute resources
- Storage resources
- Networking components
- Virtualization technologies
- Management and orchestration tools

Benefits of Cloud System Architecture

- Cost efficiency
- Scalability and flexibility
- Business continuity
- Global accessibility

- Automated management

This overview introduces the foundational concepts of Cloud System Architecture, providing a basis for deeper exploration into cloud technologies and design principles.