

Data Protection and Management

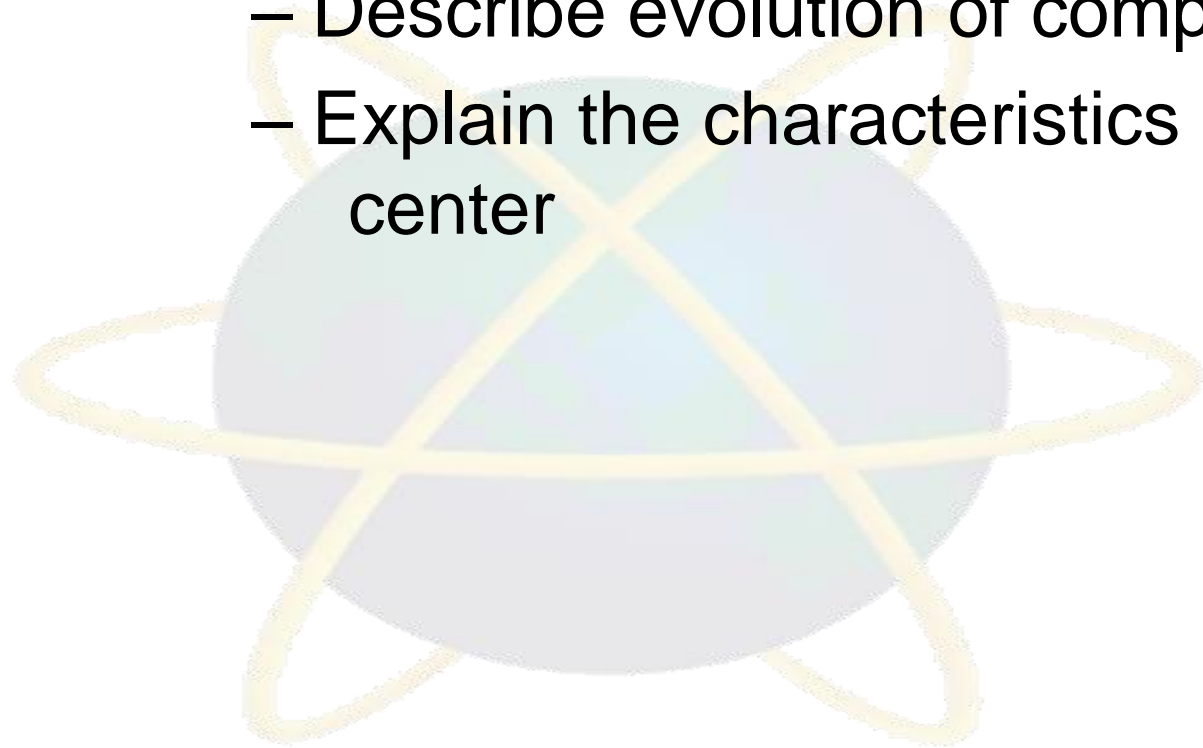
Evolution of Computing Platform



A · P · U
ASIA PACIFIC UNIVERSITY
OF TECHNOLOGY & INNOVATION

Learning Outcome

- By the end of this lecture, you should be able to:
 - Identify and explain computing platform
 - Describe evolution of computing platform
 - Explain the characteristics of a third platform-centric data center



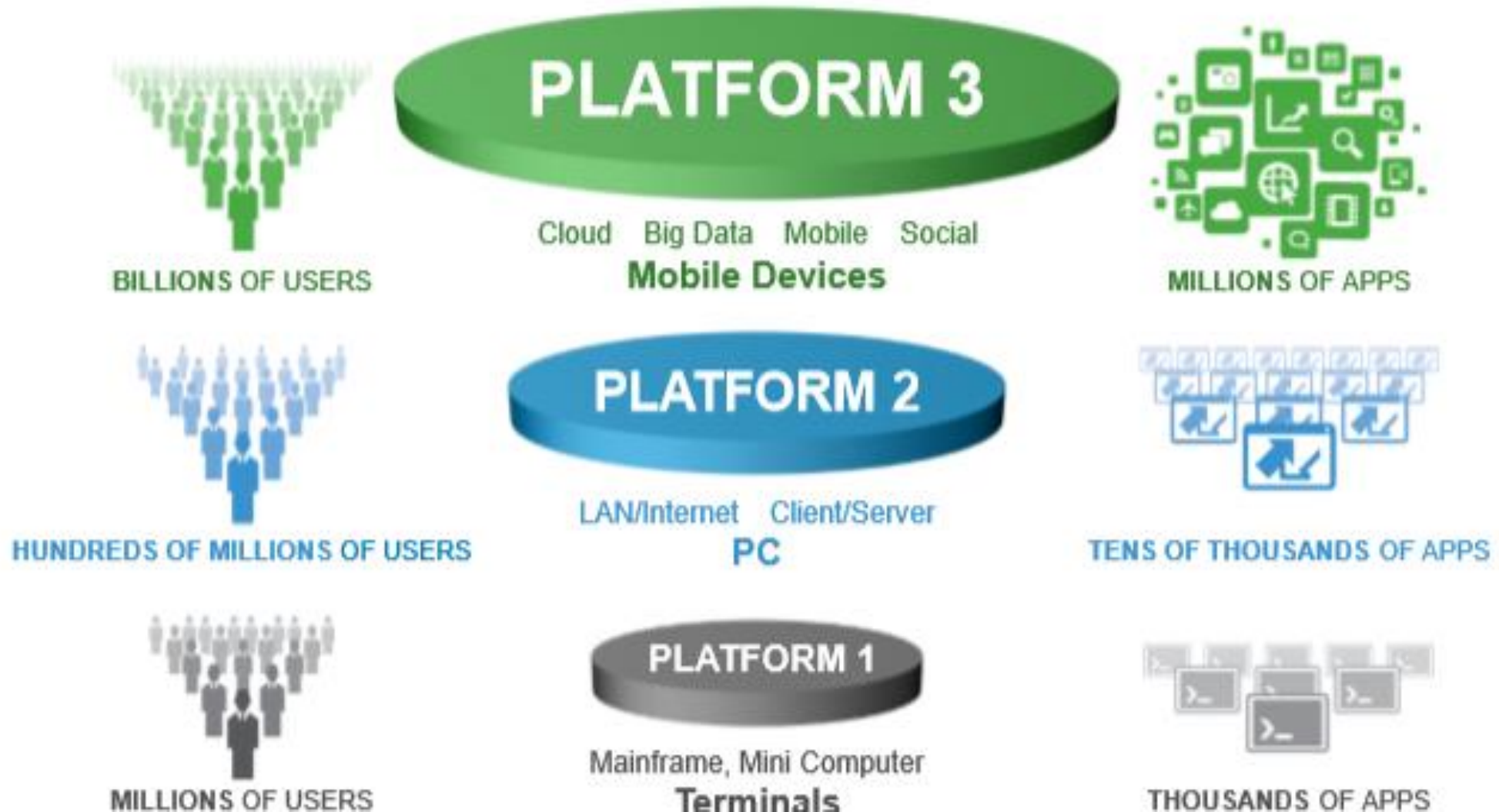
Computing Platform

In general, the term “platform” refers to hardware and software that are associated with a particular computing architecture deployed in a data center.

Computing platforms evolve and grow with advances and changes in technology.

Each computing platform is defined not so much by the comprising technologies but by the scale of users and the scope of applications the technologies enable.

Evolution of Computing Platform



Platform 1

- The first platform dates back to the dawn of computing and was primarily based on mainframes and terminals.
- It supported millions of users, with applications and solutions in the low thousands.



Platform 2



The second platform emerged with the birth of the personal computer (PC) in the 1980s

It was defined by the client-server model, Ethernet, and web applications.

It supported hundreds of millions of users and tens of thousands of applications.

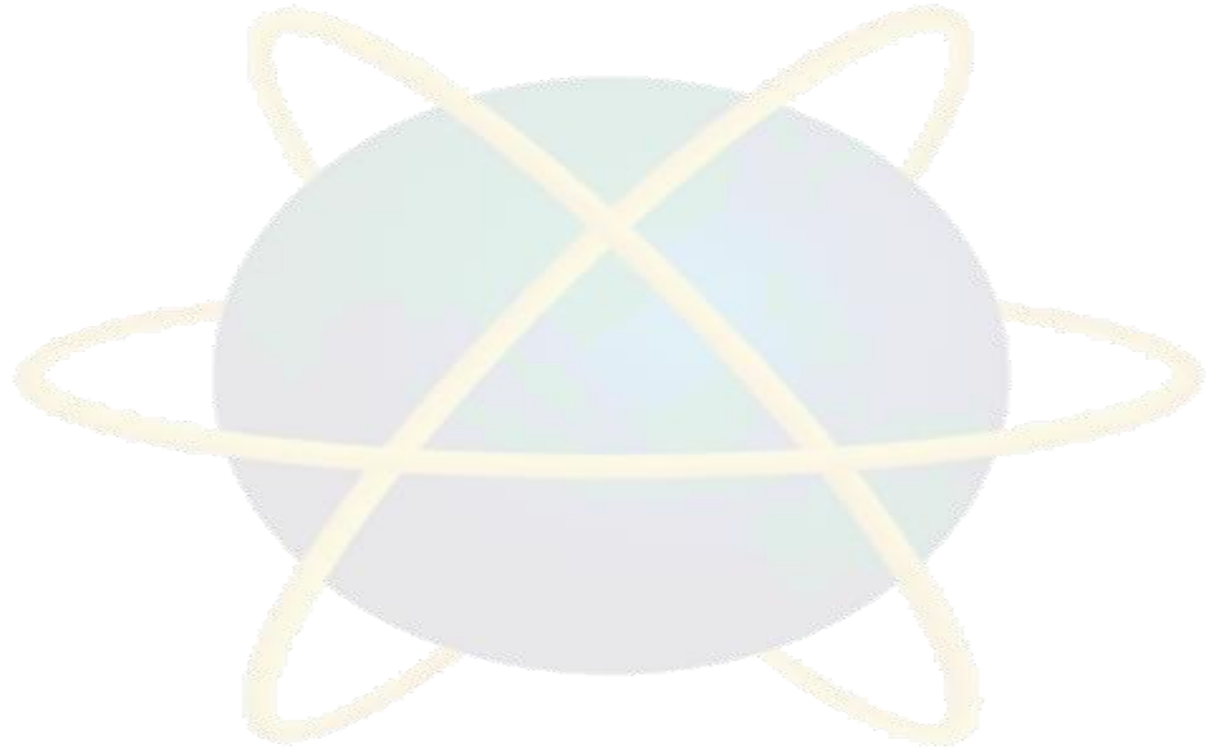
Platform 3



- The third platform of today comprises cloud, Big Data, mobile, and social technologies.
- The third platform is already supporting a user base of billions and has millions of applications and solutions.
- This is evident from the fact that over 2.8 billion people (~40 % of the world's population) are currently connected to the Internet (more than half of them through mobile devices), and that there are over one million applications available for iOS and Android devices alone.

Quick Review

- Explain the types of computer platform
- Why there are different type platforms



Characteristics of Third Platform-centric Data Center

Modern data centers need to support applications based on third platform technologies.

A third platform-centric data center should have the following key characteristics.

Characteristics of Third Platform-centric Data Center



Continuous availability

A data center should ensure

24x7x365

availability of data to provide anytime, anywhere data access.



IT-as-a-service:

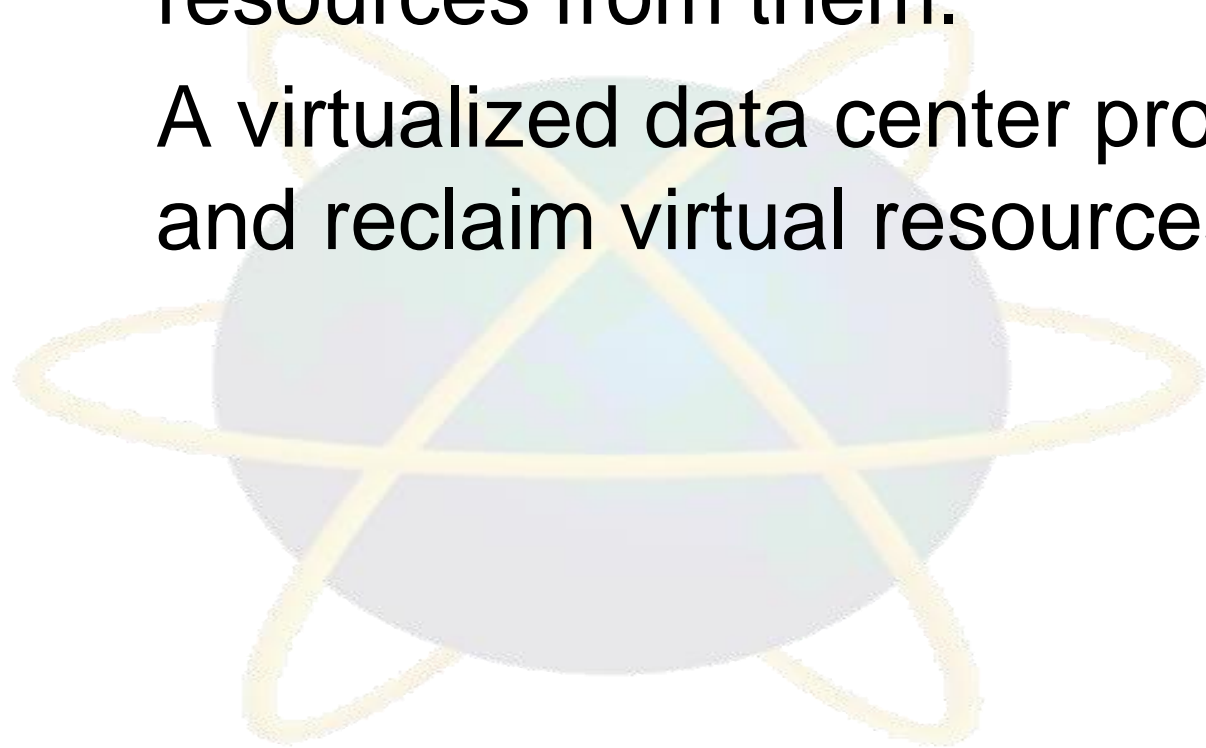
A data center should adopt the IT resource delivery as a service paradigm. This enables the IT department of an organization to become a utility to the business and deliver IT resources as services for convenient consumption by business units.

IT services are maintained in a service catalog which enables users to provision resources in a self-service manner.

Virtualization

It is the process of abstracting physical resources, such as compute, storage, and network, and creating virtual resources from them.

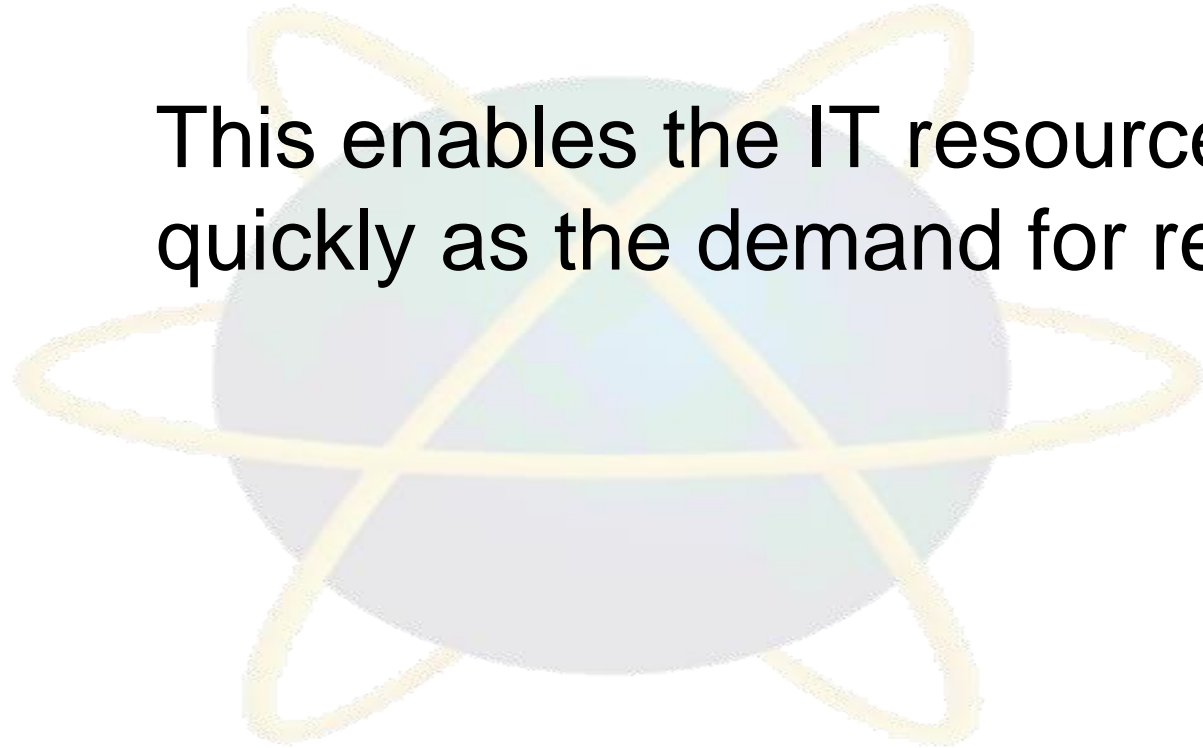
A virtualized data center provides the flexibility to create and reclaim virtual resources dynamically.



On-demand scalability

The data center IT infrastructure should be designed for scalable computing.

This enables the IT resources to scale-up, down, in, and out quickly as the demand for resources grows and shrinks.



Multi-layered security

Multiple layers of security help in mitigating the risk of security threats in case one layer is compromised. An attacker must breach each layer to be successful.

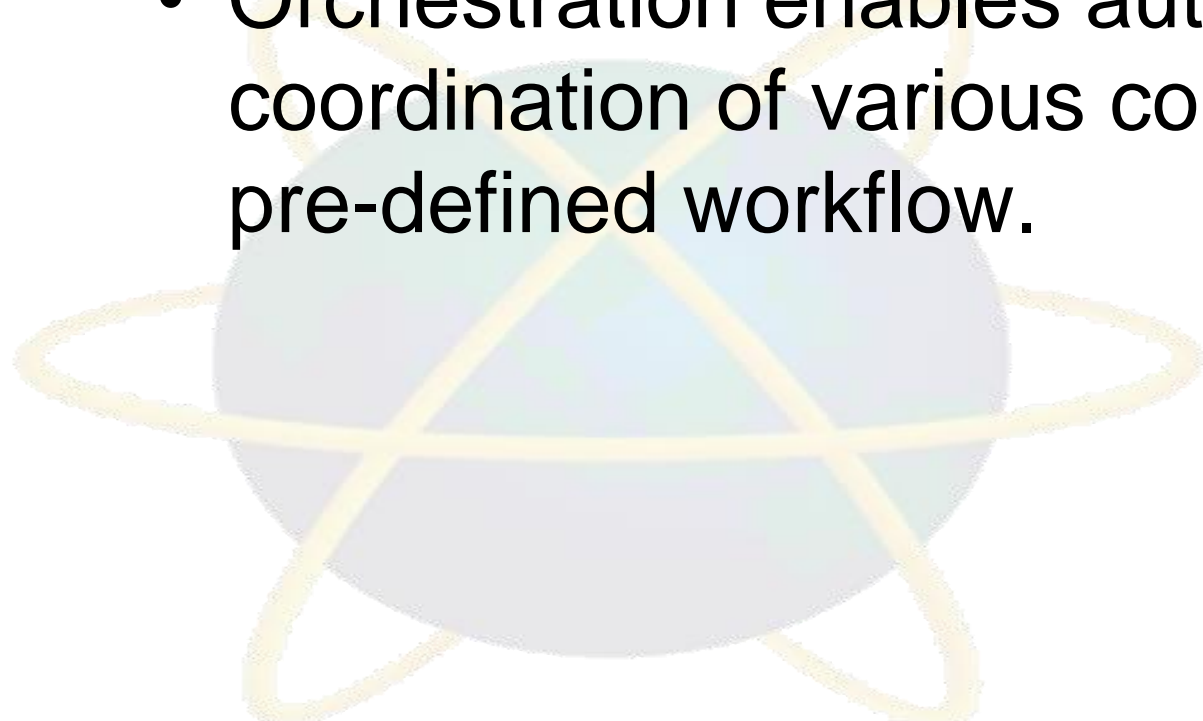
This, in turn, provides additional time to detect and respond to an attack.

Software-defined

- A software-defined data center supports software-centric control of data center resources.
- A controller software that is decoupled from hardware sends instructions to the hardware components to perform the required operations.

Orchestrated management

- Orchestration of management operations helps in improving business agility.
- Orchestration enables automated arrangement and coordination of various component functions based on a pre-defined workflow.



Quick Review

Match the following elements with their functions:

1. CPU

A. Aggregates smaller disks to form a larger logical storage

2. LVM

B. Volatile data storage internal to a compute system

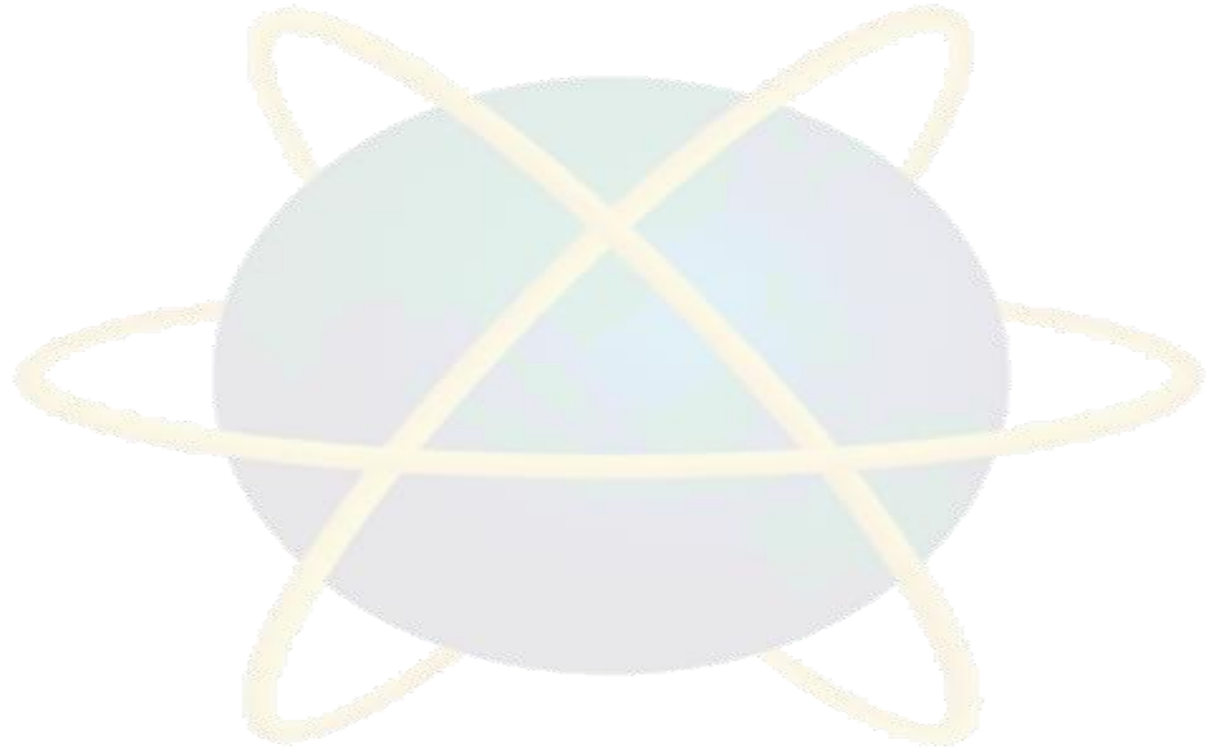
3. File System

C. Performs arithmetical, logical, and I/O operations

4. RAM

D. Groups and organizes data units in a hierarchical structure

Q & A



Next Topic

Data Protection and Availability Solutions

